



**Skill India**  
कौशल भारत - कुशल भारत



सत्यमेव जयते  
GOVERNMENT OF INDIA  
MINISTRY OF SKILL DEVELOPMENT  
& ENTREPRENEURSHIP

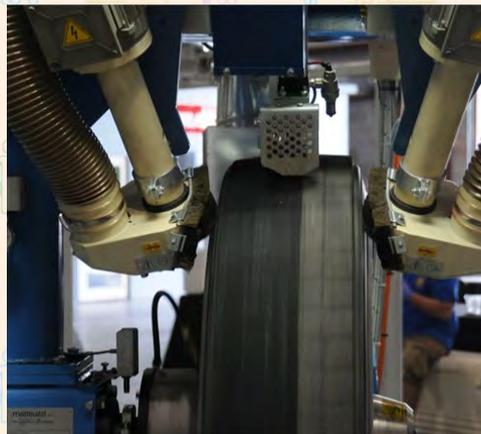


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National  
Skill Development  
Corporation

Transforming the skill landscape



# Facilitator Guide



Sector  
Rubber Industry

Sub-Sector  
Tyre

Occupation  
Tyre Retreading

Reference ID: RSC/Q3501, Version 2.0  
NSQF Level: 4

## Tyre Retreading- Inspection & Buffing Operator

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**Shri Narendra Modi**  
Prime Minister of India

“ Skilling is building a better India.  
If we have to move India towards  
development then Skill Development  
should be our mission. ”



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## About this Guide

Tyre Retreading - Inspection & Buffing Operator is very important and critical job in Tyre Industry. Proper knowledge about the job is needed to ensure quality of tyre to be retreaded. A good Tyre Retreading - Inspection & Buffing Operator ensures adherence to all procedures of tyre retreading and save cost by reducing rejections.

This guide is designed for trainers to support them to train and upgrading the knowledge and basic skills of candidates for 'Tyre Retreading - Inspection & Buffing Operator' in 'Rubber Industry' sector. All the training to be given by trainer are covered in this guide. Upon successful completion of this course the candidate will be eligible to work as 'Tyre Retreading - Inspection & Buffing Operator'.

This guide is designed to provide the necessary knowledge and skill inputs for a trainer to train candidates in an organized and disciplined manner by following safe working practices.

This guide shall give in-depth practical information to trainer, which will be very useful in training the candidates for 'Tyre Retreading - Inspection & Buffing Operator'.

This Facilitator Guide is designed to enable training for the specific Qualification Pack (QP). Each National Occupational (NOS) is covered across Unit/s.

Key Learning Objectives for the specific NOS mark the beginning of the Unit/s for that NOS. The symbols used in this book are described below.

## Symbols Used



Steps



Activity



Tips



Notes



Objectives



Do



Ask



Explain



Elaborate



Facilitation Notes



Learning Outcomes



Say



Role Play



Demonstrate



Exercise



Team Activity



Resources



Summary

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# 1. Introduction to Rubber & Tyre Industry

Unit 1.1 – Introduction to Rubber Industry

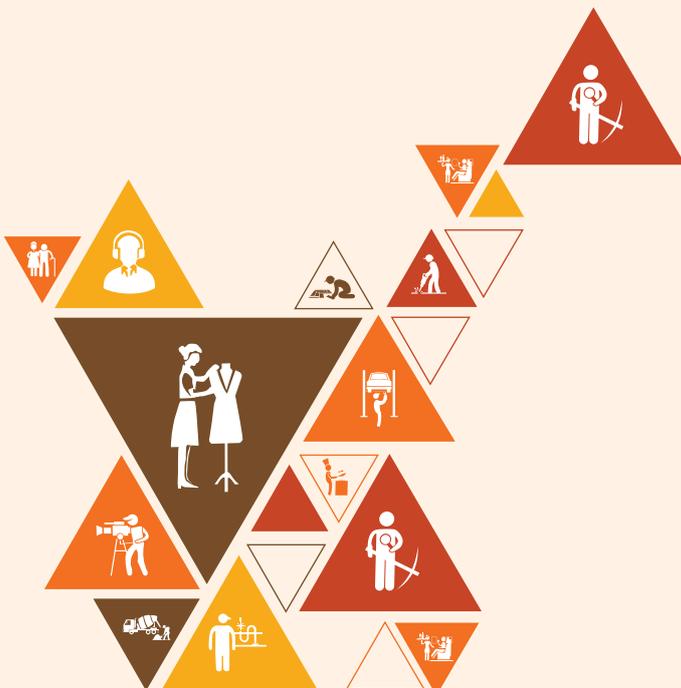
Unit 1.2 – History of Tyre and Tyre Industry in India

Unit 1.3 – Tyre Basics

Unit 1.4 – Process of Tyre Retreading

Unit 1.5 – Equipment used in Tyre Retreading

Unit 1.6 – Job Role of a Tyre Retreading Inspection and  
Buffing Operator



## Key Learning Outcomes

**At the end of this module, participant will be able to:**

1. Discuss about rubber industry.
2. Explain different sources of rubber.
3. Discuss about major Indian rubber associations.
4. Explain the history of tyre.
5. Discuss the tyre industry in India.
6. Define all major players of tyre manufacturing in India.
7. Identify and define tyre specifications.
8. Discuss and explain tyre retreading process.
9. Explain equipment used for tyre retreading.
10. Define roles and responsibilities for tyre retreading inspection and buffing operator.

## UNIT 1.1: Introduction to Rubber Industry

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Discuss rubber and rubber industry.
2. Define types of rubber.
3. Explain about rubber manufacturing processes.
4. Explain different uses of rubber.
5. Discuss about various rubber bodies and associations in India.

### Resources to be Used

- Laptop.
- Projector.
- White Board.
- Marker.
- Duster.
- Sample of different RSS sheets.
- Sample of crepe rubber.
- Sample of TSR rubber.
- Sample of synthetic rubber.
- Sample of reclaimed rubber..
- Sample of products made of rubber.
- Tyre samples with sidewall coding.
- Tyre samples with cut sections

### Notes for Facilitation

- Start the first session with very high energy.
- Be ready with course curriculum.
- Make list of benefit from the course for the participants.
- It would be good if you have some success stories of previous batch participants, it will create enthusiasm in the new participants.
- Make list of expectation from the participants.
- Prepare some questions related to the job roles for asking from the participants for generating curiosity, for example – Ask participants if they know what is tyre made of or how tyre is made?
- Be ready for answering any question related to the job role, you should give a feeling to the participants that you have authority over the subject.
- Ensure all the resources, such as white board, marker or projector are in working condition before participants arrive.
- Create some rubber related stories to start the session for making the first session interesting and engaging.
- Arrive early in class before the participants.

- Start class on time and close the session on time, so that you can give clear message of valuing your and participants time.
- Introduce yourself with your name, qualification and work experience.
- Give details of objectives of this course.
- Give details of today's session and what they are going to learn.
- Give Safety Instructions to be followed during class.
- Brief them about the rules of class and Do's and Don'ts.
- Encourage them to share their thoughts and doubts now and during the process of this course.

## Do



- Make the small circle of the participants.
- Welcome all the participants and appreciate them for choosing this course.

## Ask



- Ask all the participants to introduce themselves.
- Ask their expectations from the course.

## Notes for Facilitation



- Make rules for class, for example:
  - All the participants will come on time
  - In case of leave, participants will inform atleast a day in advance
  - No talk over mobile will be allowed in class
  - Mobile will always be in silent / switch off mode in class
  - No gossip in class
  - Any break in class will be taken with trainer permission only
  - If any participant wants to say anything, he/she will raise his/her hand. He/ she will only speak when trainer ask for it.
- You can add any other rules, which will increase effectiveness of training.
- Objectives of this program is that after completing the course, the participants will be able to –
  - Understand requirement of skilled work force for making strong India
  - Discuss about related Sector and Sub Sector
  - Describe the job role in detail
  - Perform all the responsibilities of job role
  - Get developed as a job ready person
  - Get recognized certificate for acquired skill
  - To get job in related industry based on certificate received after completing the course.
- Some of the roles and responsibilities of a Trainer are –
  - To provide training as per QP and NOS defined.
  - To clear all doubts of the participants related to the job role during training
  - To create required discipline in class
  - To ensure health and safety of all the participants during class training and field visits
  - Provide maximum practical exposure to participants for job role

## Say



- Thank the participants for their participation.
- Inform them rules of the class.
- Inform them about course curriculum.
- Inform them about assessment and assessment procedure.
- Inform them about your Role and responsibility.

## Notes for Facilitation



- To know participants better, you can ask their hobbies, the sport they like, the sports person or film star they like. It will help you open them up and create some bonding.
- Learn their name, this is very important in order to have a feeling of connectivity.
- Create your own rules for the class. Rules can be flexible but should ensure discipline in the class.
- It is necessary to let the participants know about assessment procedures so that they can do study in line with that and assessment should not come as a surprise to them.
- Anticipate questions from the new participants and prepare in advance.
- If the participants appear bored then have some activity in class.
- Stay organised in class, student give respect to organised teachers.
- Use variety of teaching techniques, so that you can engage all the participants.
- Set high but realistic expectation from the participants.

## Team Activity-1



**Objective:** To get introduction of all the participants of the course.

**Procedure:**

- Ask the participants to make a circle.
- Give a ball to any participant to start the activity.
- The participant needs to pass the ball to the person whose name starts with letter 'A'.
- After getting the ball the participant will tell her name, native place and hobby.
- Now the participant needs to pass the ball to another participant whose name starts with letter 'A', if no other person available of the name with letter 'A', then ball should be passed to the person having name with the next letter.
- Get introduction from all the participant by end of the activity.

**Activity Outcome:**

- While having the fun, all the participant will know about each other.
- Facilitator will be able to break the ice with the participants

Activity	Time	Resources
Ball passing introduction activity	2 Hours	Rubber ball

Table 1.1.1

### 1.1.1: The Rubber

Do



- Greet the participants for the day.
- Give Summary of previous session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

Ask



- Ask the participants what they know about rubber?
- Ask the participants about products made of rubber?

Say



- Rubber is a polymer material, which has elastic properties.
- It is also called as 'caoutchouc'. It normally has long chain molecules known as "polymers" and the combination of elastic and polymers, which give it another name called "elastomers". Forms of poly-isoprene that are used as natural rubbers are terms as 'elastomers'.
- Products made from rubber have a flexible and stable – three-dimensional chemical structure and are able to withstand under force large deformations.

Ask



- Ask students what they know about rubber?
- Ask students about products made of rubber?

Say



- Rubber was discovered in South America initially and then later spread all over the world including India.
- Rubber normally has long chain molecules known as "polymers" and the combination of elastic and polymers, which give it another name called "elastomers".
- Forms of poly-isoprene that are used as natural rubbers are terms as 'elastomers'.
- Products made from rubber have a flexible and stable – three-dimensional chemical structure and are able to withstand under force large deformations.

- The material can be stretched repeatedly to at least twice its original length and upon immediate release of the stress, will return with force to approximately its original length.
- Besides these properties the modulus of rubber is from hundred to ten thousand times lower as compared to other solid materials like steel, plastics and ceramics.
- This combination of unique properties gives rubber its specific applications like seals, shock absorbers and tyres.
- Based on the source of raw material, there are two kinds of rubber, natural rubber (NR) and synthetic rubber (SR). However, reclaimed rubber is produced from treating the scrap rubber.

## Notes for Facilitation

- You could ask the students what they know about rubber and products made by Rubber.
- Give students some time to think about how the rubber industry has grown in the last five years.
- Set the context and describe the industry trends in rubber.

## Ask

- Ask students whether they have seen the rubber plant?
- Ask students about places where rubber plants grow?

## Say

### Natural Rubber

- Natural rubber is mainly harvested from rubber plants.
- There are many plant species that generate natural rubber and there are many other plants that contain rubber latex.
- For quality and economic considerations, rubber plant is a major source of natural rubber. 'Latex' is a sticky, milky white, liquid material.
- The process used for extracting latex is called 'Tapping'.

## Explain

- Explain rubber tree plantation.
- Explain requirement of climate for growing rubber trees.
- Explain areas favorable for growing rubber tree in India.
- Explain process of tapping.

## Demonstrate



- Show photographs of rubber tree plantation.
- Show photographs / video of tapping process.

## Say



### Latex

- Latex is further processed for making rubber, which can be used for making some useable products.
- Latex is processed in following ways –Sheets, Creps, block rubber, preserved latex concentrates
- Most of natural rubber is sold in form of Sheets, Creps and block rubber.
- Sheets are the easiest form to produce; hence it is the most saleable form of natural rubber.
- There are 2 types of sheets –Ribbed smoked sheets (RSS), Air Dried Sheets (ADS)
- Out of above types, ribbed smoked sheets are more common in sale.
- There are five grades of ribbed smoked Sheets based on quality. These grades are established by International rubber quality and packing conference.
- Only completely dried sheets are allowed to be sold in this category. Based on different conditions, these ratings are called as RSS1, RSS2, RSS3, RSS4 and RSS5.

## Ask



- Ask students how natural rubber sheets are produced?
- Ask students about purpose of making sheets?

## Explain



### Sheets

- Explain process of latex processing for making rubber.
- Explain types of dried natural rubber form
- Show samples of RSS and ADS
- Explain difference in five grade of RSS
- Explain purpose of creating sheets

## Demonstrate



- Show sample of natural rubber sheet to students.

## Ask



- Ask students how crepes are produced?
- Ask students about purpose of making crepes?

## Say

### Crepes

- Creps is derived from coagulated latex / field coagulum, when it is rolled many times between rollers and then dried in air.

## Example

There are many types of creps,

- Pale latex creps,
- Estae brown creps,
- Thin brown creps,
- Thick blanket creps,
- Flat blanket creps,
- Standard flat bark crepe
- Pure smoked blanket crepe.

## Demonstrate

- Show sample of creps to students.

## Ask

- Ask students meaning of TSR?
- Ask students about purpose of creating TSR?

## Say

### Technical Specialized Rubber (TSR)

- Technically specialized natural rubber (TSR) is natural dried Rubber which is graded based on technical specification.
- It was initially proposed by ISO (International Standard Organisation) and then Malaysia adopted it in 1965. Later on all natural rubber producing countries adopted the system.
- In this system, first letter of country name is used for making code. For example - Indian natural rubber is coded as ISNR (Indian standard natural rubber).

## Explain

- Explain specifications included in TSR Rubber.
- Explain different countries specification of TSR Rubber.

## Demonstrate



- Show sample of TSR to students.
- Show specifications of TSR to students.

## Ask



- Ask students what is synthetic rubber?
- Ask students about purpose of making Synthetic Rubber.

## Say



### Synthetic Rubber

- Synthetic rubber is manmade rubber, which is derived from petroleum, coal, oil, natural gas and acetylene.
- It has more than 10 major classes, many of these are copolymers i.e. polymers consisting of more than one monomer.
- Initially, styrene-butadiene copolymers (SBR) synthetic rubbers were invented. Which is one of the widely used elastomer.
- Synthetic rubber is used as a replacement for natural rubber in many cases, especially when improved material properties are needed.

## Example



1. Emulsion styrene butadiene (ESBR).
2. Butadiene rubber (BR).
3. Solution styrene butadiene (SSBR).
4. Isobutylene Isoprene Butyl (IIR).
5. Acrylonitrile butadiene (NBR).
6. Ethylene propylene diene monomer (EPDM).

## Demonstrate



- Show sample of synthetic rubber to students.

## Say



### Reclaimed Rubber

- Reclaimed rubber is recovered from the processing of vulcanized scrap rubber tyres, tubes and miscellaneous waste rubber goods.
- The process for reclaiming the rubber includes use of heat, chemicals, heavy mechanical working.
- This reclaimed rubber has plasticity, which is near to the original plasticity.
- This rubber can be compounded, processed and re-vulcanized as fresh rubber.

**Explain**

- Explain briefly the process of producing reclaimed rubber.
- Explain different products used to produce reclaimed rubber.

**Demonstrate**

- Show samples of reclaimed rubber to students.

## 1.1.2: Uses of Rubber

**Ask**

- Ask students the uses of rubber?

**Say**

- Rubber is a widely used product now a days. It is used in automobiles, household and industrial applications.

**Example**

- Tyres and Tubes - Automobile and agriculture tyres and tubes are the largest consumers of rubber. This category consume around three fourth of total rubber consumption.
- 'Under the bonnet' products for automobile - It includes, door and window profiles, noses, bells, matting, flooring and dampeners (anti-vibration mounts).
- Conveyor Belt – for various industrial use.
- Hoses and pipes – for air and water circulation.
- Medical equipment - Gloves (medical household and industrial), toy balloons, rubber bands
- Adhesives – Many manufacturing industries and products also use Rubber product as adhesives. It is mostly used in paper and the carpet industry
- Textile industry – Rubber is also widely used in textile industry.
- Shock absorbers – Impact absorbing property of rubber is very useful in shock absorber application.
- Machine mounting pads – it is widely used as machine mounting mount, which helps in reducing vibration transfer from machine to floor.

## Demonstrate



- Show different products made of rubber to students.

### 1.1.3: Overview of Indian Rubber Industry

## Ask



- Ask students position of India in world for producing natural rubber?
- Ask students about world's top rubber producer country?

## Elaborate



- Initially rubber industry started in south america during 19<sup>th</sup> century. Where it was restricted for a long time from export.
- In 1876, English brought it to India, Sri Lanka and other parts of Asian countries. Initially rubber trees were planted in Kolkata and then later it was grown in coastal areas of Kerala, Tamil Nadu and Karnataka.
- Rubber product manufacturing started in India, in the year 1920. Now, Rubber industry is one of the key industries of the Indian economy.
- India is the 4<sup>th</sup> largest producer of natural rubber in the world.
- India is the second largest consumer of natural rubber.
- India is the fifth largest consumer of natural rubber and synthetic rubber together in the world.
- India is the world's largest manufacturer of reclaimed rubber.
- India and China are consuming 48% of total world's rubber production.

## Ask



- Ask students to name some of the big rubber parts producing companies?
- Ask students about highest rubber producing states of India?

## Say



### Overview of Indian Rubber Industry

- In India there are approximately 6000 rubber product companies.
- Out of these some 35 are large scale companies, 320 medium scale and more than 5000 are small scale industries.
- These companies do total turnover of around Rs. 12,000 Crore. These units are manufacturing more than 35000 rubber products, employing four Crore people, which also includes 22000 technically qualified support personnel.
- India's rubber industry has growth rate of 8-9% per annum.
- India consumes nearly 17 lakh tones of rubber (including natural, synthetic and reclaim) annually for producing a wide range of rubber products.
- Tamil Nadu (3.57 lakh tones), Kerala (2.10 lakh tones) and Maharashtra (1.98 lakh tones) are top three rubber consuming states in the country.

## Elaborate

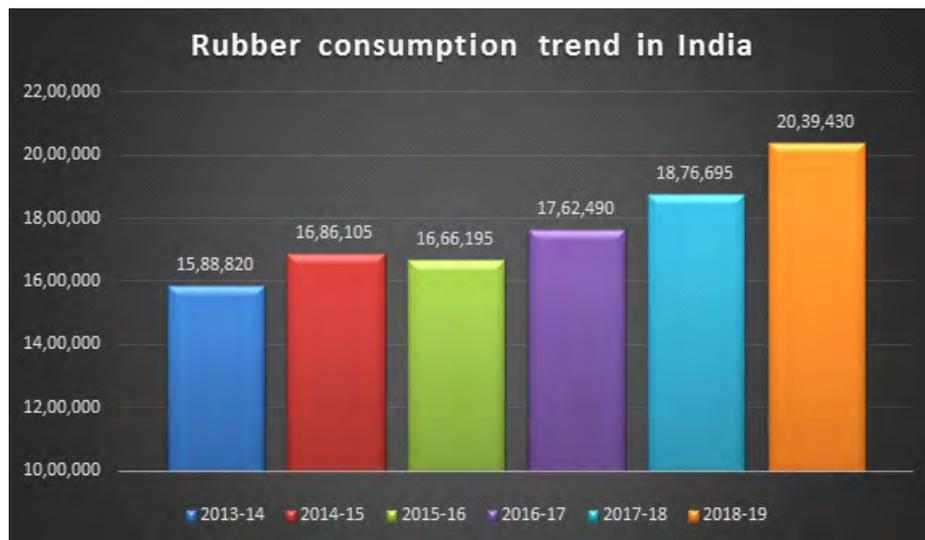


Fig. 1.1.1. Trend of rubber consumption

## Ask



- Ask students the sector name, which consumes biggest part of Rubber.

## Explain



The major sectors consuming rubber in India are as follows:

1. Automotive tyre sector.
2. Bicycles tyres and tubes.
3. Footwear.
4. Camelback and latex products.
5. Belts and hoses.

## 1.1.5: Rubber act, rubber promotion and development bodies

### Ask



- Ask students the names of prominent rubber bodies?
- Ask students about purpose of having various rubber associations for Rubber?

### Say



- Indian rubber industry is regulated by some acts. Also there are some bodies that are helping rubber industries in development.

## Elaborate

There are many organisations in Indian which work for promotion, development and nurturing rubber and allied industry. Some key organisations are:

1. Rubber Board
2. CAPAXIL - Chemical and Allied Products Export Promotion Council
3. AIRIA - All India Rubber Industries Association
4. ATMA - Automotive Tyre Manufacturers Association
5. RSDC - Rubber Skill Development Council

### **Rubber Board**

Initially it was made as an act, which was made in the year 1947. It was changed in 1955 and named as 'Rubber Board'.

#### **Rubber board takes care of following works:**

Its main objective is to promote rubber and related industry development in India. Apart from that following are its main activities:

- Assisting and encouraging scientific, technological or economic research in rubber and rubber products.
- Train students in improved methods of rubber planting, cultivation, manuring and spraying.
- To provide technical advice to rubber growers.
- Improving the market practice of rubber.
- The collection of statistics from owners of estates, dealers and manufacturers.
- To facilitate the central government on all matters related to the rubber industry.
- To furnish status reports related to the rubber industry as and when required by the central government from time to time.

### **Chemical & Allied Products Export Promotion Council (Capexil)**

CAPAXIL works for export promotion of rubber and chemical based products. It makes export promotion strategies by doing in depth research of overseas markets. It facilitates export promotion by representing India in various International forums and bilateral meets. It plays an important role in creating export market for Indian rubber products.

### **All India Rubber Industries Association (AIRIA)**

Since its inception in 1945 AIRIA is working for promotion of rubber and tyre industry. A biannual event organised by AIRIA called, 'The India rubber Expo'. This Expo is big platform for rubber product manufacturer, machine manufacturers, raw material suppliers, rubber testing equipment suppliers, consultant and exporters. Apart from that it interacts with Government of India for various policy matters and works in the best interest of rubber industry.

### **Automotive Tyre Manufacturing Association (ATMA)**

This is an association of automotive tyre manufacturers in India. It works as a liaising agency between tyre industry and Indian government. It also actively work for interests of Indian tyre industry in various ways, such as:

- Finding new export market for Indian made tyre,
- Suggesting government higher duties on imported tyres for limiting their imports,
- Advocating lower prices of input material of tyres, etc.
- Creating ways of co-operation among tyre companies for advancing and safeguarding the interest of the industry.
- To support or oppose legislative or other measures which are likely to affect the Indian Tyre industry.

**Rubber Skill Development Council (RSDC)**

RSDC has been constituted under the aegis of National Skill Development Corporation (NSDC), in collaboration with All India Rubber Industries Association (AIRIA) and Automotive Tyre Manufacturers Association (ATMA).

**Objectives of RSDC are:**

- To encourages the industry to employ skilled and certified manpower.
- To identify and fulfill skill development needs in the rubber sector.
- To identify labour market skill gaps.
- To frame occupational standards.
- To facilitate development of practical and high quality training content.
- To ensure adequate availability of faculty through Train The Trainer initiatives.
- To build accreditation and certification mechanisms.
- To encourage training capacity building through private sector participation.

**Team Activity-1** 

**Objective:** Identify rubber raw materials and rubber products..

**Procedure:**

- Arrange a display of rubber raw materials and products made of rubber, plastic and metal.
- The participants need to identify the name of rubber raw materials and the products made of rubber and write their answer in their note pad.
- The participants need to submit the answers to the facilitator.
- The facilitator will declare the real identity of rubber raw material and products, once all the participants complete the identification process.

**Activity Outcome:**

- You will be able to test the knowledge of participants.
- Participant will be keen to know more about the rubber.

Activity	Time	Resources
Identify rubber raw materials and rubber products.	4 Hours	Rubber raw material from different sources, product made of different type of rubber, plastic and metal.

Table 1.1.2

## UNIT 1.2: History of Tyre and Tyre Industry in India

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Discuss the history of tyre development.
2. Explain types of tyre being sold in India.
3. Describe the major tyre brands in India.
4. Describe the ratio of tyre sales in terms of vehicle segment and customer segment.
5. Describe the share of business of all major tyre sellers in India.

### Resources to be Used

- Laptop
- Projector
- White Board
- Marker
- Duster

### Do

- Greet the participants for the day.
- Give summary of previous session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

### Ask

- Ask the students the use of tyres seen by them in different vehicles?
- Ask the students different tyre brands known to them?

## 1.2.1: History of Tyre

### Say

- After long use of initially made fully rubber tyre, in 1845 RW Thomson invented and patented pneumatic tyre.
- In this tyre, it was possible to fill air and it used to absorb jerks coming from road. In 1895, pneumatic tyre was first time used in automobiles.
- Michelin invented radial tyres in 1948.

## 1.2.2 Consumption of tyre

### Say

- Tyre is one of the fastest consuming parts of any automobile, be it Truck, Bus, Car, Bike or Scooter.
- Apart from these vehicles, it is also get consumed in other equipment like, Bicycle, Rickshaw or other unconventional vehicles.

## 1.2.3: Tyre Companies in India

### Ask

- Ask students to name some of the Tyre companies producing Tyre in India?

### Say

- Dunlop was the first Tyre Company to put up plant in India in 1926 in West Bengal.
- After that in 1961 Madras Rubber Factory also called 'MRF' started manufacturing Tyres in Chennai.
- Now approximately 40 big organisations are producing Tyres apart from many un-organised sector companies.

### Example

1. Apollo Tyres
2. Bridgestone
3. Ceat
4. Goodyear
5. JK Tyres
6. Michelin
7. MRF
8. TVS

### Notes for facilitation

- You can tell students the figure of tyres being produced per annum currently in India, which is more than 10 Crore.
- You can tell students Total turn over of tyre industry, which is more than 30,000 Crores.
- You can tell export details of tyres, which is that tyres are also being exported to 65 countries worldwide.

## 1.2.4: Tyre demand in India

### Explain



It is important for us to understand the tyre demand to know the landscape of tyre market. The demand for tyre can be bifurcated in 2 ways:

1. By vehicle segment
2. By customer segment

#### By Vehicle Segment

if we analyse vehicle segment wise demand for year 2015, the demand for commercial vehicle is highest. It has share of 60% of total tyre sales. Next comes passenger car vehicle, which is 23%. Then comes Agri vehicle tyres which accounts for 9% of total sales. Next is 2 Wheeler tyres and other miscellaneous tyres, such as: cycle, rickshaw and other industrial application tyres.

#### By Customer Segment

f we analyse customer segment wise demand for year 2015, the demand for OEM (Original Equipment Manufacturer, such as: Car or truck manufacturer) is highest. It has share of 60% of total tyre sales. Then comes the after market sales of tyres. In which tyres are sold in open market for replacement in the vehicles. This segment accounts for 30% of total tyre sales. Next comes the export segment, which accounts for 10% of total tyre sales in the country.

## 1.2.5: Tyre Market Share in India

### Explain



It is interesting to know about market position of tyre manufacturers in India. There are many national and international players available in India. Their position as per their market share in India is below:

1. MRF - 29%
2. Apollo Tyres - 17%
3. JK Tyres - 13%
4. Ceat - 12%
5. Balakrishna - 7%
6. Birla tyres - 5%
7. Bridgestone - 4%
8. Others - Rest

## Activity-1

**Objective:** Tyre type identification.

**Procedure:**

- Arrange a display of various types of tyres, such as: scooter, truck, car, etc.
- The participants need to identify the tyre type from the given tyre samples.
- The participants need to submit the answers to the facilitator.
- The facilitator will declare the correct answers, once all the participants complete the identification process.

**Activity Outcome:**

- You will be able to test the knowledge of participants.
- Participant will be keen to know more about the tyre.

Activity	Time	Resources
Tyre type identification.	1 Hours	Scooter tyre, car tyre, truck tyre, motorcycle tyre, LCV tyre, etc.

Table 1.2.1

## UNIT 1.3: Tyre Basics

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Explain what is tyre.
2. Describe the constituent material of a tyre.
3. Explain the parts of tyres.
4. Define types of tyres being used.
5. Describe the meaning of sidewall coding of a tyre.
6. Describe the specification of tyres.

### Resources to be Used

- Laptop
- Projector
- White Board
- Marker
- Duster
- Tyre samples with sidewall coding
- Tyre Samples with cut sections

### Do

- Greet the participants for the day.
- Give summary of previous session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

### Ask

- Ask students what is their understanding about tyre?
- Ask students as per them, what are the materials used in tyre making?
- Ask students purpose of using tyre?

## 1.3.1 What is tyre?

### Say

Tyre is ring shaped part, which is used in almost all automobiles. It is mounted on wheel and it remains in contact with the road. Its function is to provide traction between the road and the wheel and to absorb the jerks to some level, while vehicle is on the move. It also protects wheel rim from getting damaged and support the weight of the vehicle.

## Demonstrate



- Show different type of tyres to students.
- Demonstrate students the speciality of tyre as per their applications in vehicle.

## 1.3.2: Material of tyre

### Ask



- Ask students materials used in making tyre?
- Ask students reason of making tyre from rubber?

### Say



Normally tyre is made up of rubber – Natural or synthetic rubber such as styrene butadiene copolymer and mixed with some chemical compounds such as silica and carbon black. Carbon black is a black pigment, which is made due to incomplete burning of natural gases; it makes 20-25% of tyre in terms of weight. Carbon black provides resistance to tyre from wear and tear. It also acts as a reinforcement agent.

To add tensile strength to Tyre it also has cords, which are normally made of Steel, polyester, cotton or nylon.

Many chemicals are also used to make rubber compound which helps tyre to protect itself from aging and harmful effects of ultraviolet rays. The use of these chemicals also helps in expediting the curing process.

## 1.3.3: Parts of tyre

### Ask



- Ask students name of tyre parts?
- Ask students about purpose of treads in a Tyre?

### Say



Any regular tyre has following parts:

- 1- Tread
- 2- Bead
- 3- Sidewall
- 4- Belt
- 5- Ply
- 6- Shoulder
- 7- Sipe Groove
- 8- Rib

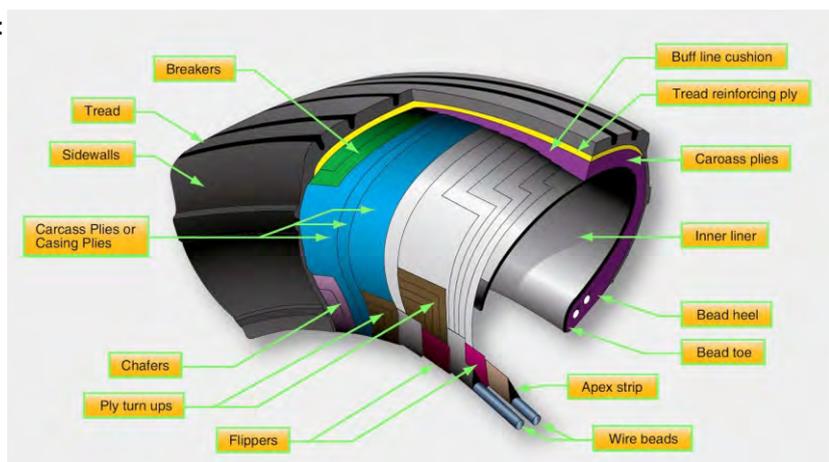


Fig. 1.3.1. Tyre parts

## Explain

### Tread

This is the outer most portion of tyre. This is the area of tyre which remains in contact with the road surface while moving. Tread provide grip to tyre with the road. The design and size of tread is based on the road condition, for example - if a vehicle is designed to run on muddy surface or off road, it will have bigger tread blocks, while the vehicle which is supposed to run on normal road will have small grooves. The vehicles which are supposed to run in controlled conditions, like only dry condition (racing cars / formula one), will have no grooves. Tread with no groove will provide maximum contact with road, hence maximum friction. Higher friction will enable vehicle to transfer maximum force to vehicle to achieve higher speeds.

### Bead

This is the internal periphery of tyre. This is made of high tensile steel cords. These cords are coated in rubber. This part of tyre gets fitted on Wheel rim. Contact of tyre with Rim remains Airtight in tubeless tyres.

### Sidewall

This is the part of tyre, which joins tread with bead. This part gives lateral support to tyre. Sidewall has coding of tyre specifications and tyre company logo.

### Belt

This is a mesh like part, which is made of woven sheets of steel, coated with rubber. This is placed around the tyre and gives strength, durability and puncture resistance to tyre.

### Ply

These are made of woven fiber and polyester cords with rubber coating. There are multiple layers of these plies around tyre. This makes basic structure of tyre and gives durability to tyre.

### Shoulder

This is the area between the sidewall and the tread. Construction of this part plays a very critical role while vehicle takes turn.

### Sipe/ Grooves

Grooves are made between tread blocks. Purpose of grooves is to keep vehicle stable while running in watery and muddy conditions by dispersing water and mud. Small grooves made in tread blocks itself are called Sipe. Purpose of sipe is to provide extra stability to tyre in watery and muddy conditions. Sipe and groove also helpful for tyre stability in ice road conditions.

### Rib

This is made in the center part of tyre, around outer periphery, for providing extra reinforcement.

### Types of Tyre

Initially tyre were made of cross-ply design, now a days radial tyres are more in use.

#### Cross-Ply Tyre

In Cross-ply tyre, Tyre is made of multiple layers of rubber. The layers of rubber are placed typically at 55°. Layers are put diagonally on one another. In this type of tyre, Sidewall and top area are dependent on each other. Hence, Sidewall flex is transferred to tread area and footprint is deformed and this increases the chances of tyre slip.

#### Radial Tyres

Radial tyres have steel cord layers in tread area, hence giving sturdiness to Tyre. These are not placed in Sidewall area hence that area remains flexible.

### 1.3.5: Tyre Sidewall coding

#### Explain



Tyres have coding as per their construction, on their sidewall. It is very important to understand that, in order to use different kinds of tyres.



Fig. 1.3.2. Tyre sidewall coding

Like in above case the code is – **205/55 R/16 91V**

- 205- Width of tyre, i.e. the tyre has width of 205 mm
- 55- Aspect ratio, i.e. Ratio of height and width of tyre is 55
- R- radial construction, i.e. Tyre is a radial tyre
- 16- Rim diameter, i.e. Diameter of Wheel Rim is 16 inches
- 91- Load Index, i.e. Load carrying capacity of tyre
- V- Speed Rating, i.e. Tyre is safe till what speed.

### 1.3.6: Tyre load index

#### Explain



Tyre load index is the load which a tyre can carry safely. It works as per table given below –

Load Index	Kgs						
71	345	81	462	91	615	101	825
72	355	82	475	92	630	102	850
73	365	83	487	93	650	103	875
74	375	84	500	94	670	104	900
75	387	85	515	95	690	105	925
76	400	86	530	96	710	106	950
77	412	87	545	97	730	107	975
78	425	88	560	98	750	108	970
79	437	89	580	99	775	109	1000
80	450	90	600	100	800	110	1060

Table 1.3.1. Tyre load index

**Tip**

Load index for normal working range of cars, is given above. As per our example for 95 Load index, safe load is 690 for a tyre. So, overall for 4 tyres, load capacity is 2760 kg.

### 1.3.7: Tyre speed rating

**Explain**

Same as load Index there is a rating for Safe speed for a Tyre. Each speed rating number codes are related to a specified speed rating of the tyre.

Speed Rating	Kms		Speed Rating	Kms
N	140		U	200
P	150		H	210
Q	160		V	240
R	170		Z	240+
S	180		W	270
T	190		Y	300

Table 1.3.2. Tyre Speed Rating

**Tip**

In normal Cars, Speed Rating - V Tyres are being used, as taken in example for Sidewall coding interpretation. These tyres are safe for running car till 240 km/h speed.

### 1.3.8: Slip angle

**Explain**

Slip angle is the direction the wheel is pointing towards versus the directional travel of the tyre. Since tyre is made of rubber, the elasticity of rubber bends and stretches under different speeds, while braking and cornering.

Tyre increases grip level, with increased slip angle. After some point the rubber will give up some of its adhesive property and begin to slide, resulting in a lower grip.

Normally a narrower and taller tyre will have a larger slip angle, while wider and lower designs, will have less slip angle.

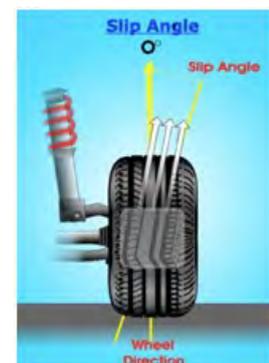


Fig. 1.3.3. Slip angle

### 1.3.9: Tyre aspect ratio

#### Explain

This is the ratio of tyre height and width, which is represented after multiplying with 100. For ex. In above case 65% aspect ratio is shown as 65. Normally, lower Aspect ratio gives better stability (as explained in below diagram), but selection of tyre depends on other factors too.

$$\text{Aspect ratio} = H/W \times 100$$

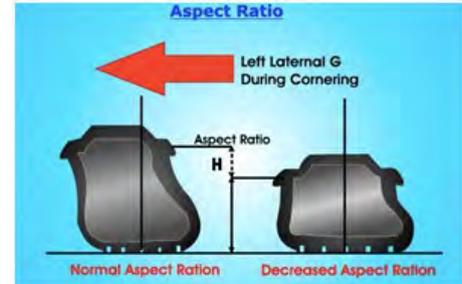


Fig. 1.3.4. Aspect ratio

#### Activity-1

**Objective:** Tyre parts identification.

**Procedure:**

- Arrange a display of cut sections of different tyres, such as: scooter, truck, car, etc.
- Explain key parts of a tyre by showing in one tyre cut sample.
- Ask the participant to identify the highlighted tyre parts of the given tyre cut samples.
- The participants need to submit the answers to the facilitator.
- The facilitator will declare the correct answers, once all the participants complete the identification process.

**Activity Outcome:**

- You will be able to test the knowledge of participants.
- Participant will be keen to know more about the tyre.

Activity	Time	Resources
Tyre parts identification	4 Hours	Cut samples of scooter tyre, car tyre, truck tyre, motorcycle tyre, LCV tyre, etc.

Table 1.3.3

## Activity-2

**Objective:** Tyre sidewall coding interpretation.

**Procedure:**

- Arrange a display of different tyres with tyre sidewall coding, such as: scooter, truck, car, etc.
- Explain the sidewall coding meaning for one tyre sample.
- Ask the participant to read and interpret the sidewall coding of the given tyres.
- The participants need to submit the answers to the facilitator.
- The facilitator will declare the correct answers, once all the participants complete the interpretation process.

**Activity Outcome:**

- You will be able to test the knowledge of participants.
- Participant will be keen to know more about the tyre.

Activity	Time	Resources
Tyre sidewall coding interpretation	4 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos and images of sidewall code interpretation, scooter tyre, car tyre, truck tyre, motorcycle tyre, LCV tyre, with sidewall coding

Table 1.3.4

## UNIT 1.4: Process of Tyre Retreading

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Explain the requirement of tyre retreading.
2. Describe the benefits of tyre retreading.
3. Describe types of tyre retreading.
4. Explain the tyre retreading process.

### Resources to be Used

- Laptop
- Projector
- White Board
- Marker
- Duster
- Field visit to tyre retreading factory
- Different machines used in tyre retreading

### Do

- Greet the participants for the day.
- Give summary of previous Session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

### Field Visit

- Take students for a field visit to the tyre retreading factory.

## 1.4.1: Tyre retreading - an introduction

### Ask

- Ask students about tyre retreading process?

## Explain



When tyres become worn, they can be restored with new tread. there is no significant difference in quality between new and recapped tyres. Many tyres can be repeatedly retreaded, delaying the landfill disposal of the tyres and enhancing our environment through recycling. Large truck tyres are typically recapped as part of a routine tyre – management program. Two reasons are cited for this preference. First, the low cost to retread tyres makes it a cost effective routine measure for modern tyre-management program. Second, precure retread tyres are perceived to have higher mileage return than new tyres. This means better cost savings for the wise fleet managers. This is especially true on specialty wheels that are costly to replace

## Demonstrate



- Demonstrate the different stages of tyre retreading process.

### 1.4.2: Types of retreading tyre

## Elaborate



There are two types of retreading being used in industry:

**Pre cure:** Previously prepared tread strip is applied to tire casing with adhesives. It allows more flexibility in tire sizes and it is the most commonly used method.

**Mold cure:** Raw rubber is applied to the tire casing and it placed in a mold where tread is formed. A dedicated mold is required for each tire size and tread design.

### 1.4.3: Tyre retreading process

## Elaborate



Main stages of retreading process are - Inspection, buffing, preparation, building, curing and final inspection.

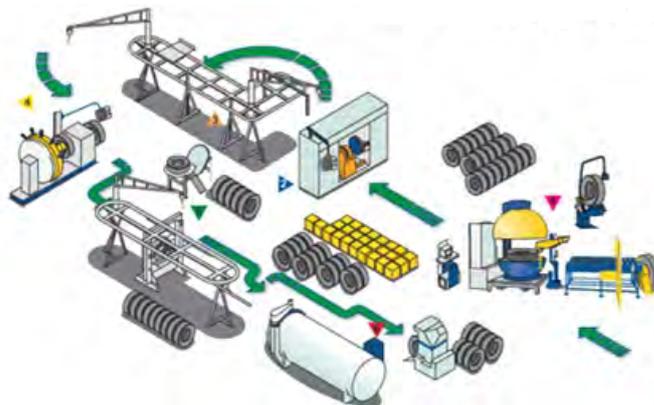


Fig. 1.4.1. Tyre retreading process

## Explain

### Collection of Worn Tyres

Collection of worn tyre is not part of tyre retreading process, but it is an essential pre-requisite of starting tyre retreading. Worn tyres are collected to select suitable casings for tyre retread. Worn tyres are either discarded by users after using their optimum life or given by them for retreading. Either way, the worn tyres are collected at collection center and then shipped to tyre retreading centers.

### Inspection of Tyres

Each tyre received in a tyre retreading plant is subjected to a rigorous visual inspection. Inspectors are assisted by the use of non-destructive sophisticated inspection equipment.

This is the first part of retreading process. At initial inspection stage, a visual and tactile examination of the casing takes place followed by a non-destructive shearography test. This test detects any inherent separations within the casing which are impossible to detect with the naked eye.

### Buffing

The buffing process removes the remaining tread & sidewall rubber from the casing to the exact specified dimensions by the mean of high speed revolving rasps and brushes.

By use of CNC machines, the operator is now able to achieve the exact dimensions required so that the casing is the exact profile for its intended matrix.

The granular residue produced during the buffing process is extracted using high powered suction pumps and collected in hoppers for recycling.

The tyre's old tread is mechanically removed on high speed buffers. Buffing machines available now a days are extremely accurate and remove the proper amount of old rubber while turning the tyre to an exact specified diameter and radius.

### Section Repair and skieving

With advances in state-of-the-art repair materials and repair methods, many of these tyres can be routinely repaired and in most cases can be retreaded when the original tread is worn off.

The repair station is where any surface injury is treated using effective material and tools for grinding and patching.

### Cementing and filing

Even in small injuries it is critical that the injury is cleaned and filled. If this is not done, severe rust, separation and steel cable looseness could take tyre out of service. The injury should be inspected, and then cleaned out with a carbide cutter. After cementing the injury, a vulcanizing rubber stem should be applied to "fill" the injury. This would create a permanent repair that maximizes tyre life.

### Building Tread Rubber

In the pre-cure system, the tread rubber has already been vulcanized with the new tread pattern design. The buffed tyre needs a thin layer of cushion gum to be wrapped around its crown area. The pre-cured tread rubber is then applied with the building machine. This is called the building process.

### Enveloping

For enveloping, tyres are first fitted an outer envelope at the envelope-mounting table before the inner envelope is fitted into them. The enveloped tyres are then vacuumed out for preparation prior to curing.

### Curing

The tyre is then placed in a curing chamber and the pre-cured tread becomes adhered to the tyre through a vulcanizing process.

## Explain



### Final Inspection and Painting

The retreaded tyre is subjected to a final inspection. This inspection insures that only tyres that meet industry quality standards are allowed to leave the retread plant. All retreaded tyres are encouraged to be returned with the sidewalls painted using a light coat of black tyre paint.

## Activity-1



**Objective:** Tyre retreading process flow making

**Procedure:**

- Explain the steps involved in the tyre retreading process.
- The participants needs to understand these steps and draw a process flow for tyre retreading process.
- They need to submit the process flow to the facilitator.
- Facilitator will declare the correct answers, once all the participants submit the process flows.

**Activity Outcome:**

- You will be able to test the knowledge of participants.
- Participant will be keen to know more about the tyre retreading process.

Activity	Time	Resources
Tyre retreading process flow making	4 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos and images of tyre retreading process.

Table 1.4.1

## UNIT 1.5: Equipments used in Tyre Retreading

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Explain equipment used in tyre retreading.
2. Describe various parts of tyre retreading equipment.

### Resources to be Used

- Laptop
- Projector
- White Board
- Marker
- Duster
- Field visit to tyre retreading factory
- Different machines used in tyre retreading

### Do

- Greet the participants for the day.
- Give summary of previous Session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

### Field Visit

- Take students for a field visit to the tyre retreading factory.

## 1.5.1: Equipment for tyre retreading

### Say

Tyre retreading is a very special process hence requires special machines. Following are some of the key machines and equipment used in tyre retreading –

## Elaborate

### Visual Inspection Machine

Tire Visual inspection machine is used to manual tyre inspection of the tyre from inside to outside to evaluate the tyre condition and make sure whether the tire can be retreaded or not, Inspection machine has following parts:-

1. Rotating loader
2. Rotating tyre spreader
3. Adjustable lamp
4. Control panel

### Electric spark inspection machine

This machine is similar to visual inspection machine with addition of a electric spark shaft. When machine detect any pin hole, nail hole and puncture those not visible by naked eye give spark.

### Tyre shearography testing machine

Tyre shearography testing machine is used to test the tyre strength and check the tyre of air leaks under the high pressure with computer monitor system.

Some defects (such as the damage caused by unsubstantial or broken wires) can only be found under high pressure. Inflating pressure into the fixed tire, monitor the surface images on the computer screen.

### Buffing machine

We use buffing machine to remove old & worn tread surface from tyre, prepare the surface for a new tread. The origin treads design and some of the under-tread is removed to provide the casing with the required dimensions and surface texture. Buffing machine has following parts:

1. Vertical loader
2. Buffing head/ roller
3. Dust collector
4. Control panel

### Silde wall repair station

This is station is used for repairing of the tyre sidewall damages. These damages are detected during tyre inspection.

### Curing chamber

Curing chamber is an autoclave-type device that applies specified heat and pressure, and over a period of time, causes the bonding layer in the built tyre to cure, and permanently adheres the new pre-cured tread to the prepared casing. Curing chamber has following parts:

1. Main chamber for tyre curing
2. Control panel
3. Safety valve
4. Pressure gauge
5. Temperature gauge
6. Hanger
7. Manual testing valve
8. Zero pressure switch
9. Pneumatic system
10. Vacuum pressure gauge
11. Alarm

## Elaborate

### Vertical solution mixer

This machine is designed for making your own rubber solution or cement by mixing cushion gum and rubber solvent for tyre repairing and tread application.

### Tread building/ stretching machine

Tread building or stretching machine is used for pasting new tread in a tyre with pressure.

### Envelope spreader

This machine is used for removing envelope after tyre curing process.

### Rim mounting station

This machine is designed to mount the pressure curing rim onto the tyre or to remove from it.

### Extruder Gun

The extruder gun is used to apply rubber solution in old tyre repairing area.

### Other tools

Buffing Kit Basic



*Fig. 1.5.1. Buffing kit basic*

B&J Buffing Kit Pro



*Fig. 1.5.2. Buffing kit Pro*

### Chalk/crayon (White / Yellow)



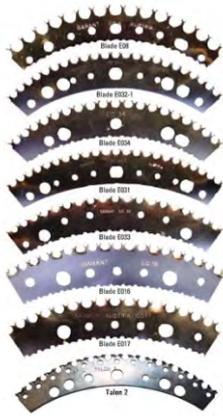
*Fig. 1.5.3. Chalk*

### Buffing rasp:



*Fig. 1.5.4. Buffing rasp*

**Buffing blade:**



*Fig. 1.5.5. Buffing blades*

**Carbides tools:**



*Fig. 1.5.6. Carbide rasps*

**Sanding drum**



*Fig. 1.5.7. Sanding drum*

## Activity-1

**Objective:** Tyre repairing process demonstration

**Procedure:**

- The facilitator needs to demonstrate tyre repairing process.
- The facilitator should explain the impact of poor inspection or buffing on tyre repairing.
- The participants should make notes of points explained during the process.
- The facilitator should clarify any doubts in points noted by participants.

**Activity Outcome:**

- Participants will be able to learn the buffing process of a tyre.
- Participant will be keen to know more about the tyre retreading process.

Activity	Time	Resources
Tyre retreading process demonstration	4 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos and images of tyre repairing process, inspected and buffed tyres for repairing, raw material for tyre repair.

Table 1.5.1

## Activity-2

**Objective:** Tyre curing process demonstration

**Procedure:**

- The facilitator needs to demonstrate tyre curing process.
- The facilitator should explain the impact of poor inspection or buffing on tyre curing.
- The participants should make notes of points explained during the process.
- The facilitator should clarify any doubts in points noted by participants.

**Activity Outcome:**

- Participants will be able to see the end objective of inspection and buffing of a tyre.
- Participant will be keen to know more about the tyre retreading process.

Activity	Time	Resources
Tyre curing process demonstration	4 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos and images of tyre curing process, repaired tyres for curing, curing chamber, curing envelop.

Table 1.5.2

## UNIT 1.6: Job Role of a Tyre Retreading Inspection and Buffing Operator

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Explain the Job role of a tyre retreading - inspection & buffing operator.
2. Describe the responsibilities of a tyre retreading - inspection & buffing operator.

### Resources to be Used

- Laptop
- Projector
- White Board
- Marker
- Duster
- Field visit to tyre retreading factory
- Different machines used in tyre retreading

### Do

- Greet the participants for the day.
- Give summary of previous Session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

## 1.6.1: Job role of a tyre retreading inspection and buffing operator

### Ask

- Ask students about their understanding of responsibilities of a tyre retreading - inspection & buffing operator.

### Say

- Job role or responsibilities of a tyre retreading - inspection & buffing operator is very important in tyre retreading company.

## Elaborate

### Elaborate the duties of a tyre retreading - inspection & buffing operator to the participants –

1. The individual needs to prepare required tools, equipments, machine and material for tyre inspection and Buffing.
2. The person needs to verify that correct material and tyres to be inspected for casing are available.
3. He/ She needs to clean all tools are clean and in ready to use condition.
4. The person needs to set machine parameters before starting the operations.
5. The individual needs to ensure adequate light available in the inspection area.
6. The person needs to ensure put all tyres to be inspected in one row size wise.
7. He/ She needs to ensure that all the work is being done as per procedure defined and work instructions set for the process.
8. The individual needs to ensure that the process is being carried out in defined cycle time and there is no delay in any activity which may lead to quality issues.
9. The person needs to ensure that tyre to be re-treaded on visually from outside and all 360 Degree.
10. He/ She needs to ensure that all equipment and measuring instruments to be used in process are calibrated as per their due dates.
11. The person needs to ensure that In case tyre is not suitable for re tread –put REJECT mark.
12. The individual needs to Ensure Remove rubber tread portion full width of TREAD only.
13. The person needs to ensure housekeeping of machine and nearby areas.
14. He/ She needs to ensure proper use of PPEs, while working in company.
15. The individual needs to ensure that no body-part is inside the buffing machine before operating the machine.
16. The person needs to ensure that all the procedures related to health and safety are complied as per company regulations.
17. The individual needs to safely handle tyre after Buffing.
18. He/ She needs to ensure clean manually and remove all lose dust rubber particle with the help of brush / by blowing air blast.
19. The person needs to mark Ok mark on tyre and keep in OK row for next operation.
20. The individual needs to analyze the quality issues and resolve the problems to ensure that those should not occur again.
21. The person needs to escalate the issues which are beyond his / her control, to ensure no damage to the production and company property.

## Answers

1. b    2. d    3. c    4. d    5. a    6. b    7.d    8. c    9. d    10. a





## Key Learning Outcomes

**At the end of this module, participant will be able to:**

1. Explain construction of the tyre inspection machine.
2. Describe the details of the tyre inspection machine parts.
3. Prepare machine for the tyre inspection.
4. Explain construction of the tyre buffing machine.
5. Describe the details of the tyre buffing machine parts.
6. Demonstrate the cleaning process of the tyre inspection & buffing machine.

## UNIT 2.1: Tyre Inspection Machine and Its Parts

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Explain construction of the tyre inspection machine.
2. Describe the details of the tyre inspection machine parts.

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flip charts
- Participant Handbook / Copies of Handout
- Visit to tyre retreading Factory
- Tyre inspection machine
- Tyre for retreading

### Do

- Greet the participants for the day.
- Give Summary of previous Session.
- Ask for any doubts in previous Session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course

### Field Visit

- Take Students for a field visit to the tyre retreading company.

## 2.1.1:Tyre inspection machine (Visual inspection spreader machine)

### Say

Tyre inspection is the first and very important operation of tyre retreading. Tyres are collected from various areas and each tyre's condition is different. To ensure the retreading quality of each tyre, we must check the collected tyres. The machine is used for tyre inspection is called tyre visual inspection spreader machine. This machine gives operator full 360 degree view and rotation of tyre.

## Elaborate



Fig. 2.1.1. Tyre inspection machine

Tyre inspection spreader is used to inspect the casing from inside to outside to evaluate the safety of the tyre and make the decision whether the tyre can be retreaded. Different automatic cycles can be programmed based on the number of revolutions the tyre will complete during the inspection and the travel of the spreading arms. This machine is meant to facilitate easy and proper inspection of cured tyre. The logical operation will be controlled by relay logic. AC Motor of desired rating, which will have different speeds, will do the rotation of the tyre. The tyre would be rotated at such level to ascertain complete vision of inner side. In addition, this machine is also often used as repairing station in tyre retreading line. This machine is usually used in tyre retreading lines with whole-factory mono-rail system.

Some feature of Inspection spreader machine:

- 360° Swivel top
- Adjustable tyre spreaders
- 4 tilt setting
- Vertical manually - operated tyre
- Spreaders are used for all type of tyre from cars to light truck.
- Spread and rotates the tyre at constant speed.
- Light source provides clear and safe illumination.
- Forward/reverse rotation with electric motor
- Constant and intermittent rotating speeds
- Lamp attached
- Tyre approach ramp

Following are main parts of inspection machine:

- 1- Loader
- 2- Mechanical spreaders
- 3- Adjustable lamp
- 4- Control panel

## Explain

### Loader

This is the mechanism, which loads the tyre into the machine. This is specially designed for rotate the tyre with precise speed. Operator load tyre on the loader then inspect tyre from all angle with the tyre rotation.

### Mechanical spreaders

This the mechanism, which spread tyre bead for tyre inner inspection, this design this type you can rotate tyre free while they spread the bead, which allow operator to give full inner view of tyre and operator inspect tyre properly.

### Adjustable lamp

This adjustable lamp give operator full and bright view of tyre inner area, so operator gain full access to inner area of tyre and find puncture, nail hole or other thing in tyre.

### Control panel

This is another critical part of machine. Control panel is the interface of machine. All the critical parameters like – power on/off rotation of tyre, lamp light on/off , mechanical spreader control, are set with the help of a control panel.



*Fig. 2.1.5. Control panel*

### Working procedure of tyre Inspection machine:

1. Load tire onto the inspection spreader. The tire will be lifted to the height of appropriate operation position by pneumatic cylinder.
- 2.The tire casing will be expanded to the reasonable width for easy inner inspection by the paw of inspection spreader.
- 3.Rotate tire, find and mark the defects with light.

## 2.1.2: Electric sparks tyre inspections machine

### Explain

Electric sparks Inspection machine detect tyre punctures or other injuries those not visible to the naked eye, are identified by an electrical impulse. Spark pinpoints imperfections that can be repaired later in the process.



*Fig. 2.1.6. Electric sparks tyre inspections machine*

This machine is similar to inspection machine with additionally electric impulse shed, its used for identify tyre defect, those not identified by naked eye, operator put this electric shed in to the tyre inner area and rotate the tyre, when machine detect any pinhole, nail hole or other defect in tyre it give electric spark.



*Fig. 2.1.6.-1 Electric sparks tyre inspections machine*



*Fig. 2.1.6.-2 Electric sparks tyre inspections machine*

### 2.1.3: Shearography tyre test machine

#### Explain



Fig. 2.1.7. Shearography tyre test machine

The shearography tyre test systems have been developed for the non-destructive testing of new tires in R&D and quality control, as well as for the inspection of tire carcasses in the retreading industry. The technical basis of the systems is the phase shearography system.

Shearography is a very sensitive, laser-based inspection technology. This technology is used to find air bubbles and separations in casings for tire retreading. Tires with major air bubbles inside are not valid for retreading, because they would fail during usage.

You can detect 95% of tyre defect by shearography test.

Shearography is an interferometric testing method that is able to detect even the smallest damage or defects with a size of only a few microns on stressed components. The test object is illuminated with a laser light and is inspected by a CCD camera with a special lens called as shearing lens. These lenses project the object image onto the camera chip twice; each object point is thus represented twice which results in an interferogram. When the test object deforms under load, the laser light, reflected by the component, changes. Due to superposition of an image in its unloaded state, the recording under load means the changes of each point in the image can be detected.

During tyre testing the required load is generated by varying the ambient pressure. Between the first and the second recording the pressure is lowered by about 50 mbar. Any air bubbles enclosed in the tyre expand as a result of the negative pressure and slightly deform the surface of the tyre at the weak points. Conclusions on defect type and size can be drawn by comparing and evaluating the resultant images.

## Activity-1

**Objective:** Tyre visual inspection machine working process demonstration.

**Procedure:**

- Demonstrate the process of tyre inspection on a tyre visual inspection machine.
- The participants need to understand the working process and then need to demonstrate the tyre inspection on the machine.
- The facilitator should explain the key points of inspection during the process.

**Activity Outcome:**

- The participants will learn the inspection of tyre on a tyre visual inspection machine.
- Participant will be keen to know more about the tyre retreading process.

Activity	Time	Resources
Practice on tyre visual inspection machine	8 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos and images of tyre inspection process, pre-inspected and damage point identified samples of tyres, tyre visual inspection machine

Table 2.1.1

## Activity-2

**Objective:** Electric spark inspection machine working process demonstration.

**Procedure:**

- Demonstrate the process of tyre inspection on a Electric spark inspection machine.
- The participants need to understand the working process and then need to demonstrate the tyre inspection on the machine.
- The facilitator should explain the key points of inspection during the process.

**Activity Outcome:**

- The participants will learn the inspection of tyre on a Electric spark inspection machine.
- Participant will be keen to know more about the tyre retreading process.

Activity	Time	Resources
Practice on Electric spark inspection machine	8 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos and images of tyre inspection process, pre-inspected and damage point identified samples of tyres, Electric spark inspection machine

Table 2.1.2

### Activity-3

**Objective:** Shearography testing machine working process demonstration.

**Procedure:**

- Demonstrate the process of tyre inspection on a Shearography testing machine.
- The participants need to understand the working process and then need to demonstrate the tyre inspection on the machine.
- The facilitator should explain the key points of inspection during the process.

**Activity Outcome:**

- The participants will learn the inspection of tyre on a Shearography testing machine.
- Participant will be keen to know more about the tyre retreading process.

Activity	Time	Resources
Practice of operating Shearography testing machine	8 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos tyre buffing process, pre-inspected and damage point identified samples of tyres, Shearography testing machine

Table 2.1.3

## UNIT 2.2: Tyre Buffing Machine and its Parts

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Explain construction of tyre buffing machine.
2. Describe the details of tyre buffing machine parts.

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flip charts
- Participant Handbook / Copies of Handout
- Visit to tyre retreading Factory
- Tyre buffing machine
- Tyre for retreading

### Do

- Greet the participants for the day.
- Give Summary of previous Session.
- Ask for any doubts in previous Session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

### Field Visit

- Take students for a field visit to the tyre retreading company.

### Ask

- Ask students why it is important to prepare the tyre buffing machine before tyre buffing?
- Ask students, as per them what should be the steps of tyre buffing machine preparation?

## 2.2.1: Tyre buffing machine

### Explain



Tyre Buffing Machine is one of the most important equipment for tyre retreading. After the initial inspection of tyre for retreading, next move is to buff this tyre. In Buffing process you remove all the old-worn tread on the tyre, and make the tyre casing ready for the application of a new tread. A buffed tyre gives a textured surface on the tyre casing and this aids in proper adhesion with the new tread that will be applied on this surface.

Buffing is needed for all the tyres – large or small size, radial or bias, two-wheeler or truck. The speed of spindle varies according to different tyre size. Usually lower speed is apt for bigger tyres, and higher speed suitable for smaller tyres. This is equipped with a dust collection system for pollution control.

Following are main parts of buffing machine:

1. RASP/Buffering head
2. Expansion hoop/ Vertical loader
3. Dust collector
4. Control panel
5. Tyre Lifting devices

### Explain



#### **RSAP/ buffering head**

Tyre buffing machine has a rasp pedestal and a connected mobile assembly to swing the rasp pedestal perpendicularly. Each rasp pedestal has a rasp head and a texturing device. The rasp pedestal rotates about a vertical axis. A tyre hub assembly on this machine rotates the tyre casing. This part used for buff the tyre, when operator load tyre on to a buffing machine and start the machine, rotating tyre get buffed with the help of grinding / buffing head.

#### **Expansion hoop/ vertical loader**

Expansion hoop or vertical loader is used for load the tyre on to machine for buffing, after load tyre in to expandable hoop, expand the hoop as per tyre diameter.

### Ask



- Ask students why tyre buffing process is critical?
- Ask students what could be the safety related issues in tyre buffing process?

## Say



- Tyre buffing is a very crucial and important process.
- Any carelessness in this process can cause monetary and production loss to company.
- If buffing is done more than the prescribed limit tyre will be of no use. Also if less buffing is done, tyre will become oversized after retreading. Hence, it is very crucial to follow the specifications.

## Explain

**Dust collector**

Dust collector is used for dust collection. It collect all rubber dust when you buff the tyre.

**Control panel**

The tyre buffer is controlled by an operator station through an operator console unit. You can control speed of rotation, direction of buffing head with control panel

Safety mechanisms to increase life of the grinder, automation of operations through computer-controlled programming, ancillary equipment like tyre loaders, automatic lifting and centring of your tire, measuring device to ascertain steel wires (and thus prevent its damage), efficiency and precision of buffing, automatic blade-wear compensation, automatic reverse rotation of buffing head.

**Operating procedure**

1. Operator load the onto the expendable hub.
2. Inflate the tyre in to its normal running shape. This ensures that the tyre is buffed to correct radius and profile.
3. Set control panel according to tyre size requirements. (read tyre manual for expandable rim number, tread size, radius, trim angle, cut depth, shoulder measurements (left, crown and right), and finished buffed circumference. ) or used machine with manually for buffing.
4. Start the machine and buff the tyre from its crown area, than both shoulders of tyre.

## Activity-1

**Objective:** Tyre buffing process demonstration

**Procedure:**

- The facilitator needs to demonstrate tyre buffing process.
- The facilitator should explain the impact of poor buffing process on tyre retreading.
- The participants should make notes of points explained during the process.
- The facilitator should clarify any doubts in points noted by participants.

**Activity Outcome:**

- Participants will be able to learn the buffing process of a tyre.
- Participant will be keen to know more about the tyre retreading process.

Activity	Time	Resources
Tyre buffing process demonstration	8 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos and images of tyre buffing process, pre-inspected and samples of tyres for buffing, buffing machine, buffing attachments.

Table 2.2.1

## Unit 2.3 Prepare Machines for Tyre Inspection and Buffing

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Prepare machine for the tyre inspection.
2. Perform the cleaning process of the tyre inspection machine.
3. Demonstrate the required tyre loading in the tyre inspection machine.
4. Prepare machine for the tyre buffing.
5. Perform the cleaning process of the tyre buffing machine.
6. Demonstrate the process of arranging worn tyres for inspection and buffing.

### Resources to be Used

- Laptop
- Projector
- White Board
- Marker
- Duster
- Field visit to tyre retreading factory
- Different machines used in tyre retreading

### Do

- Greet the participants for the day.
- Give summary of previous Session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

### 2.3.1: Tyre inspection machine cleaning

#### Explain

Before beginning the operation for the day, operator should do the cleaning of the machine and his / her workplace. He should ensure that his / her workplace is thoroughly cleaned. There should not be any unwanted material / tools / equipment in the workplace.

If anything, material / tools / equipment is available, which is not needed for the current process, then it should be kept at its place properly, before starting the operation.

After that, Machine should be cleaned for dust, dirt and residues of previous operation. This cleaning Should be done with a piece of cloth. Suitable solvent can be used for cleaning the machine.

A clean workplace avoids any accident possibility and also gives mental peace, which helps in increasing output.

### 2.3.1: Instructions for tyre loading in the inspection machine

#### Explain



Next step is to load correct tyre in the machine. Before loading the tyre following points should be taken care:

1. Ensure that job sheet is taken from a correct source.
2. Ensure the job sheet is latest and valid.
3. Ensure that correct tyre is identified as per job sheet requirement.
4. Ensure that machine working condition is ok as per history card of machine.
5. Ensure same size tyre put in a row before inspection is start.
6. Check physical condition of machine for any obvious damage to machine.
7. Ensure that appropriate Personal Protective Equipment (PPE) are worn before lifting the tyre
8. Ensure that appropriate tyre lifting equipment is used, which can safely lift the tyre.
9. Ensure that the previous tyre is removed from machine, before bringing next tyre is loading in to the machine.
10. Ensure that the tyre is correctly placed in machine before taking off the lifting equipment.
11. Ensure that the tyre is properly fastened before moving to the start tyre inspection.
12. Ensure the availability of all required tools for inspection and buffing.
13. Ensure that the tools are clean and in ready to use condition.
14. Ensure adequate light in the inspection area.
15. Place the tools on a safe location.
16. Ensure the use of certified/tested inspection tools and check their functioning.
17. Follow all safety norms before starting work on machine (Read Machine Manual carefully).
18. Ensure that First aid kit is available in case of any injures.
19. Ensure that tyre is clean and dry before start the inspection.
20. Use vacuum cleaner for remove dust from tyre.
21. Use cotton duster for remove water inside from tyre in case of tyre have water in inner area.

### 2.3.3: Collection of tyre for inspection

#### Explain



Before starting the machine, it should be ensured that desired quantity tyre is available. By doing this, you will save precious time which you might waste in searching for tyre after everything is ready and cycle is about to start.

It should be ensured that the available batch of tyre is clean & dry and approved for inspection process, and is as per job sheet. The tyre should be arrange in same size for inspection

## 2.3.4: Steps for tyre buffing machine preparation

### Explain



Tyre buffing is a very critical and key step in tyre retreading process, due care should be taken in machine preparation before starting the tyre buffing. Please follow the below steps for preparing the tyre inspection machine:

### Explain



#### **Tyre buffing machine cleaning**

Before beginning the operation for the day, operator should do the cleaning of the buffing machine and his/her workplace. He should ensure that buffing machine and surrounding area are thoroughly cleaned. There should not be any unwanted material/tools/equipment in the workplace.

If anything, material/tools/equipment is available, which is not needed for the buffing process, then it should be kept at its place properly, before starting the buffing operation.

After that, buffing Machine should be cleaned for dust, dirt and residues of previous operation. This cleaning should be done with a piece of cloth. Suitable solvent can be used for cleaning the machine.

A clean workplace avoids any accident possibility and also gives mental peace, which helps in increasing output.

#### **Loading tyre in buffing machine**

Next step is to load correct tyre in the buffing machine. Before loading the tyre following points should be taken care:

1. Ensure that job sheet is taken from a correct source.
2. Ensure the job sheet is latest and valid.
3. Ensure that correct tyre is identified as per job sheet requirement.
4. Ensure that machine working condition is ok as per history card of machine.
5. Ensure same size tyre put in a row before inspection is start.
6. Check physical condition of machine for any obvious damage to machine.
7. Ensure that appropriate PPEs are worn before lifting the tyre
8. Ensure that appropriate tyre lifting equipment is used, which can safely lift the tyre.
9. Ensure that the tyre is correctly placed in machine before taking off the lifting equipment.
10. Ensure that the tyre is properly fastened before moving to the start tyre inspection.
11. Ensure the availability of all required tools for buffing.
12. Ensure that the tools are clean and in ready to use condition.
13. Ensure adequate light in the buffing area`
14. Place the tools on a safe location.
15. Ensure the use of certified/tested buffing tools and check their functioning.
16. Follow all safety norms before starting work on machine (Read machine manual carefully)
17. Ensure that First aid kit is available in case of any injures.
18. Ensure that tyre is clean and any stone and nail are not in tyre crown area that will damage the buffing blade.

## Explain

### Arranging tyre for buffing

Before starting the buffing machine, it should be ensured that desired quantity tyre is available. By doing this, you will save precious time which you might waste in searching for Tyre after everything is ready and cycle is about to start.

It should be ensured that the available batch of tyre is clean & dry and approved for buffing process, and is as per job sheet. The tyre should be arrange in same size for inspection.

## Activity-1

**Objective:** Practice of tyre inspection machine preparation.

**Procedure:**

- Arrange to provide the tyre inspection machine to individual participant.
- The participants needs to practice the preparation, such as: Machine cleaning, arrangement of tyres for inspection, tyre identification, tyre cleaning, tyre tagging, tyre loading on to the machine.
- The facilitator should guide them during the process.

**Activity Outcome:**

- The participants will learn the tyre inspection machine preparation.
- Participants will build confidence by doing hands on experience.

Activity	Time	Resources
Practice of tyre inspection machine preparation.	8 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos and images of tyre inspection process, pre-inspected and damage point identified samples of tyres, tyre visual inspection machine

Table 2.3.1

## Activity-2

**Objective:** Practice of tyre buffing machine preparation.

**Procedure:**

- Arrange to provide the tyre buffing machine to individual participant.
- The participants needs to practice the preparation, such as: Machine cleaning, arrangement of tyres for buffing, buffing attachment selection, buffing attachment mouting on the buffing machine, tyre loading on to the machine.
- The facilitator should guide them during the process.

**Activity Outcome:**

- The participants will learn the tyre buffing machine preparation.
- Participants will build confidence by doing hands on experience.

Activity	Time	Resources
Practice of tyre buffing machine preparation.	8 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos and images of tyre buffing process, pre-inspected and samples of tyres for buffing, stationary buffing machine, buffing attachments, PPEs.

Table 2.3.2

## Answers

1. b    2. c    3. b    4. c    5. c    6. a    7. c    8. d    9. a    10. c







## Key Learning Outcomes

**At the end of this module, participant will be able to:**

1. Demonstrate the machine checkup points before tyre inspection.
2. Demonstrate the control panel checkup points before tyre inspection.
3. Describe importance of cleaning & maintenance of machines.
4. Perform preparation steps for the tyre inspection.
5. Describe general operating instructions for the tyre inspection.
6. Perform the tyre inspection process.
7. Describe the safety precautions to be taken during the tyre inspection process.
8. Discuss the do's and don'ts for the tyre inspection operations.
9. List responsibilities of a tyre retreading - inspection & buffing operator.

## UNIT 3.1: Initial Checks for Tyre Inspection Machine

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Demonstrate the machine check-up points for the tyre inspection process.
2. Demonstrate the control panel check-up points for tyre inspection process.
3. Describe importance of tyre inspection machine cleaning & maintenance.
5. Describe general operating instructions before tyre inspection.
6. Describe preparation points before tyre inspection.
7. Explain steps involved in tyre inspection.

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flip charts
- Participant handbook / Copies of handout
- Tyre inspection machine
- Old tyres for retreading

### Do

- Greet the participants for the day.
- Give summary of previous session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course

### Field Visit

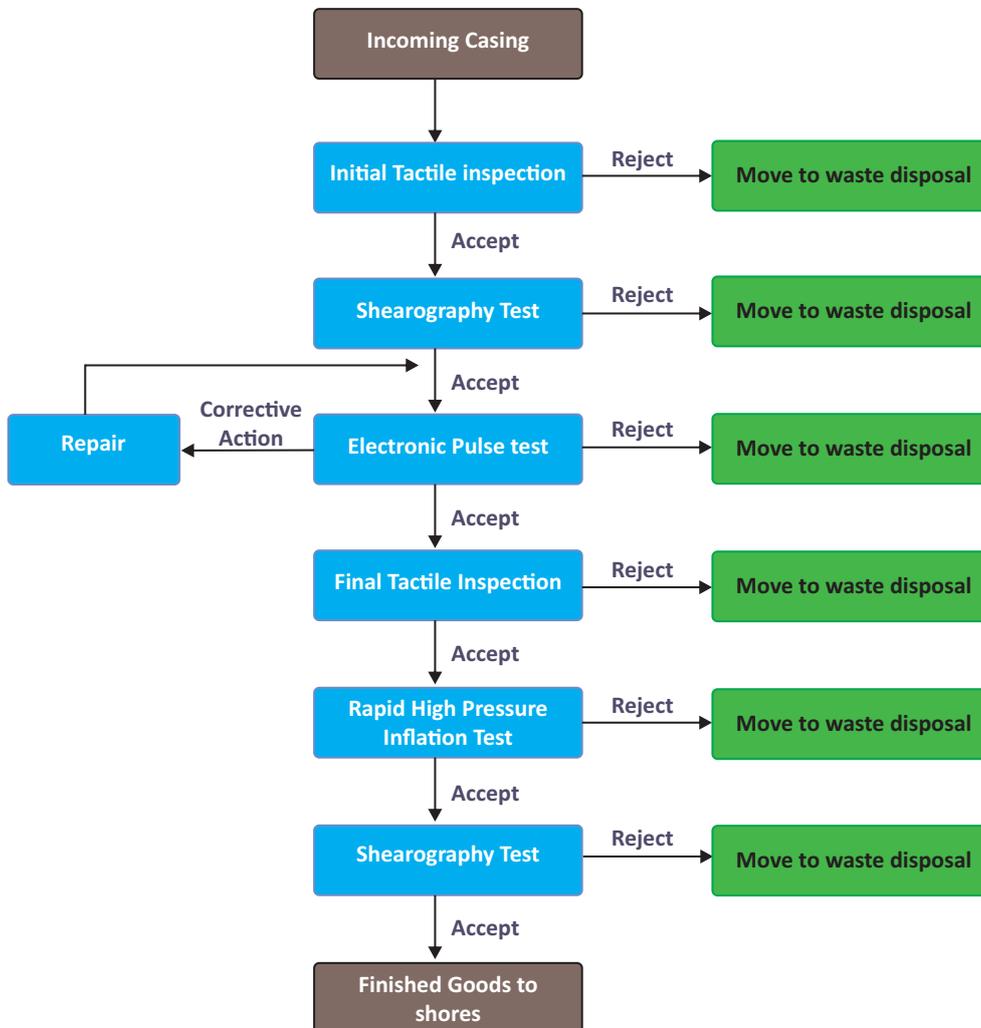
- Take students for a field visit to the tyre retreading company.

### Ask

- Ask students why it is important to check the tyre inspection machine before tyre inspection process?
- Ask students, as per them what should be the startup checks for tyre inspection?

### 3.1.1: Steps of tyre inspection

Explain



### 3.1.2: Start-up checks before tyre inspection

Explain



Before starting the operation of tyre inspection, you should check all the aspects for trouble free tyre inspection.

## Explain

### Machine check-up

1. Before starting the tyre inspection, the tyre retreading operator should him/herself check the operation of Tyre inspection machine parts. He / she should ensure that all parts, like - Loader, Tyre spreader, lamp, are in physically ok condition.
2. Ensure machine is cleaned before running inspection cycle. If not, then it should be cleaned with a clean cloth and compressed air. Ensure that there is no dirt and dust on machine.
3. Check that there is power in the control panel and the machine is on.
4. Check working of tyre Loader by running it for one cycle.
5. Open and close tyre spreader for one cycle and see that spreader are working perfectly.
6. Check lamp light is working.
7. Check that all the maters and equipment on machine are calibrated and nothing is overdue.

### Control panel check-up

1. Ensure that you have full knowledge of control panel.
2. Ensure that all parameters are set as per machine & Tyre parameter sheet.
3. Ensure that all functions in control panel are running.

### General instruction for tyre inspection

1. Ensure that correct tyre available as per job sheet.
2. Ensure that tyre is clean and dry.
3. Ensure that cleaning and housekeeping of the workplace is proper. There is no material lying in the work area which is not needed for the tyre inspection process.
4. Ensure that floor is also cleaned for any chemical or oil spillage. So that there is no threat of slip/fall hazard.
5. Ensure that tyre must be cleaned and dry before their inspected, a clean working surfaces is required, so that no debris clogs any holds in the casing up scare them from your view use the shop rag to clean out the inside of the tyre this can help you locate any penetrations that may exist because they usually snag or catch on the rag. To remove water from the tyre use a numeric or wet dryer vacuum.
6. Ensure that you have all the required tool for tyre inspection.
7. Use repair identification symbols to mark imperfections they will need to be addressed later and the retread process.

Some repair identifications symbols include:-

- Nail whole repair
- Sound nail whole repair
- Section repair
- Sound a section repair
- None repairable re credible tire
- Return as received
- Bead repair
- Spot repair
- Repair after cementing
- Liner repair
- Inside curing envelope

- Reinforcement repair
- Sounds reinforcement repair

8. Ensure that inspect tyre to be re-treaded on visually from outside and all 360 Degree

9. Roll the tyre on the ground and check for defect like – bead for any damaged , sidewall for any crack , any sidewall hole , tread damaged , severe cut of tread , exposed fabric and all other as per company SOP

10. In case differentiate useable or reject based on SOP and mark portion need repair with marker / crayon

11. In case tyre is not suitable for re tread –put REJECT mark

Potential causes for a tyre rejection:

- Cuts and Snags
- Inner liner Cracking
- Torn beads
- Mounting or Dismounting
- Whether checking
- Ozone cracking
- Equipment damage
- Side wall separation
- Stone drilling
- Run flat
- Repair failure
- Tread separation
- Impact break

### 3.1.3: Preparation before starting tyre inspection

#### Explain

There are some preparation which should be done before starting tyre inspection:

1. Before starting the tyre inspection, the operator should be in full readiness and should not have mental tensions of any kind.
2. Operator must have full knowledge of all the tools that are needed for operating the machine, and same should be kept accessible in a toolbox.

## Activity-1

**Objective:** Initial checks demonstration of a tyre inspection machines

**Procedure:**

- The facilitator needs to demonstrate in the initial check points for tyre inspection machines
- The facilitator should explain the importance of the check points of the machines
- The participants should make notes of points explained during the process.
- The facilitator should clarify any doubts in points noted by participants.

**Activity Outcome:**

- Participants will be able to learn the checking process of a tyre inspection machines
- Participant will be keen to know more about the tyre retreading process.

Activity	Time	Resources
Initial checks demonstration of a tyre inspection machines	6 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos and images of tyre buffing process, pre-inspected and samples of tyres for buffing, portable buffing machine, buffing attachments, PPEs.

Table 3.1.1

## UNIT 3.2: Operating Instructions and Safety Precautions for Tyre Inspection

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Demonstrate the steps for performing the tyre inspection.
2. Describe the safety precautions to be taken during the tyre inspection.
3. Describe Do's and Don'ts for the tyre inspection operations.
4. List responsibilities of tyre retreading - inspection & buffing operator.

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flip charts
- Participant Handbook / Copies of handout
- Tyre inspection machine
- Old tyres of retreading

### Do

- Greet the participants for the day.
- Give summary of previous session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

### Field Visit

- Take students for a field visit to the tyre retreading company.

## 3.2.1: Tyre inspection process

### Ask

- Ask students the steps of tyre inspection?
- Ask students, as per them what should be the initial checks for tyre inspection?

## Explain

The first step of the retreading process is a visual inspection, this step along with electric inspection is arguably the most important step and the retreading process. More than half of the retreaded tyre can be traced back to poor initial inspection.

Tyre initial inspection is seven rotation process and follow these steps for tyre inspection:-

1. Place the tyre on machine loader with the help of lifting equipment.
2. Put tyre spreader inside the tyre and spread the tyre wide enough, no matter which type of spreader you may be using its important to make sure that you opened the bead wide enough so you can see every inch of tyre liner.
3. Adjust the drop light lamp inside the tyre, to make the inside of the tyre is more visible.
4. Ensure that tyre must be cleaned and dry before their inspected, to remove water from the tyre use a numeric or wet dryer vacuum.
5. Start inspection process by focussing on the inside liner of the tyre during first two rotations, mentally divide the tire lighter into two areas are sides. inspecting side one as you slowly rotate the tyre the first time and side two as you rotate it the second time,
6. Ensure that both side and field to examine the tired liner for entries and damage and use repair identification symbols to mark imperfections they will need to be addressed later.
7. In next rotation of visual inspection process, your focus should be the bead area of the tyre. Began by mentally dividing the bead area into two distinct sections. The inner bead area and the outer bead area, then slowly rotate the tyre one complete turn, inspecting the inner bead area, the bead area should be checked for cuts from improper mounting or dismounting around the bead toe, any injury to the bead area that penetrates the tyre body distort to the bead it cause for rejection. The bead area should also be examined for any exposed fabric or bent damaged or exposed bead wires.
8. In rotation four of inspection, this time inspecting the tires outer bead area for cuts, punctures, nails, stone etc.
9. In rotation five and seven the focuses on the side wall areas of the tyre the bead should be in a relaxed position when you're looking for signs of separations, distortions, cuts, cracks in the side wall of the tyre.
10. Rotation seven of the seven rotation visual inspection process is inspecting the crown area of the tyre, again the bead area should be relaxed, next all rocks stones glass and other foreign materials should be removed from the tread, all injury should also be probe to determine their depth and size, such factors are critical in determining whether the tyre is suited for retreating or if it should be reject.
11. In case differentiate useable or reject based on SOP and mark portion need repair with marker / crayon
12. In case tyre is not suitable for re tread – put REJECT mark
13. Remove spreader from tyre.
14. Unload tyre with the help of Hoist from inspection table
15. Keep in OK line if it is OK or in separate line of “REJECTED “ line with proper marking

## 3.2.2: Tyre electric spark inspection process

### Ask



- Ask students what should be the safety precautions during tyre inspection?
- Ask students what should be the PPEs to be used during tyre inspection?

### Say



Now that the visual inspection of the tires a complete it's time for the it electrical inspection, during this important step punctures or other entries not visible to the naked eye identified via an electric pulse, spark pinpoints imperfections that can be repaired later in the process.

For Tyre Electric spark inspection process follow these steps for tyre inspection:-

1. Place the tyre on machine loader with the help of lifting equipment.
2. Put tyre spreader inside the tyre and spread the tyre wide enough. so the voltage shed fit inside the tyre.
3. Lower the high voltage shed in to the tyre and manually adjusts the bead wires to avoid damage, relaxed the bead spared to running rim with and press the start button.

### Demonstrate



- Demonstrate Safety instructions to be followed during tyre inspection.
- Demonstrate use of different PPEs to used in tyre inspection.
- Demonstrate implications of non-adherence to safety instructions during tyre inspection.

### Explain



Fig. 3.2.4 Tyre electric spark inspection process

1. Watch for spark either in the mirror or high voltage head, if you find any injuries in tyre need to be addressed.
2. Rotate tyre at the suspected area and press manual button, this will fire high voltage pulse, and allow you to find and verify a nail hole location in the tyre, now mark this area that can be found in later for repair.
3. In case differentiate useable or reject based on SOP and mark portion need repair with marker / crayon.
4. In case tyre is not suitable for re tread –put REJECT mark.
5. Remove spreader from tyre.
6. Unload tyre with the help of Hoist from inspection table
7. Keep in OK line if it is OK or in separate line of “REJECTED” line with proper marking.

### 3.2.3: Tyre shearography machine test process

#### Explain



Upon completion of initial inspection tires moved to shearography, Shearography measures the distance of motion of a separation or trapped air in the casing, it uses a shear lens technology to optically inspect tyre casing beneath the surface.

For tyre shearography test follow these steps for tyre inspection:-



Fig. 3.2.5 Tyre shearography machine test process



Fig. 3.2.6 Tyre shearography machine test process

1. The tyre is rolled under the sheargraphy machine table and loaded in to the machine, also mark the twelve a like reference point on tyre.
2. Close the tyre loader dome.
- 3 after closing dome, starts the machine, the tyre loads inside the machine and vacuum pressure is applied to the casing as the vacuum pulls,
4. Camera simply will rise through the center of the tyre and began taking pictures of the four critical areas of the tyre like top crown, Bottom crown, Topside wall and bottom side wall during this time any trapped air will try to migrate out of the tyre displacing the rubber as it tries to escape.
5. At the end of the scan cycle the machine will display the result of the test on the monitor, on the seventy four hundred the results will appears motion picture indicating any movement in the tyre.
6. operator well then review the test results and interpret what the condition of the casing is indicators such as double bulls eyes and Irregular movement around the bead will be clues the operator will used to determine the overall condition of the casing.



Fig. 3.2.7 Tyre electric spark inspection process



Fig. 3.2.8 Tyre electric spark inspection process

The location and sizes of the defect is indicated so the operator can quickly locate that affect in the actual casing for a physical inspection of the problem area if the indicators are to savvier of the casing will be removed from service.

### 3.2.4: Safety precautions during tyre inspection

#### Explain



There are so many hazards in Tyre inspection process; hence it is necessary to take all safety precautions. Following are some of the safety precaution, which you must take while doing tyre inspection –

1. Always wear safety shoes.
3. Always wear safety helmet.
4. Always wear safety glasses for eye protection and earmuffs for ears protection.
5. Ensure that always rotate the tyre away from the rollers on the spreader arms and to avoid getting pinched, while machine is in operation.
6. Read and understand all safety related instructions before operating the machine.
7. Take appropriate safety measures while load and unload the tyre. Use suitable lifting devices for moving tyres.

### 3.2.5: Do's and Don'ts for tyre inspection

#### Explain



<b>Do's</b>	<b>Outcome</b>
Wear proper fitting cloths.	No threat of sticking of the loose cloths in moving machine parts, which could have caused accident.
Wear safety Goggle.	No threat of entering of any foreign particle in eye.
Wear safety shoes.	No threat of any injury to foot due to any heavy object falling off over the foot.
Wear safety gloves.	No threat of any cut due to handling of sharp objects or burn due to handling hot objects.
Wear earmuffs.	No hearing damage.
Be alert during tyre inspection.	No accident probability due to carelessness.
Get trained in all safety / fire fighting equipment.	Can use them as and when needed.
Get information about location of fire fighting / safety equipment.	Can retrieve them instantly in case of any need.
Be informed about emergency stop of machine.	Can stop machine immediately, in case of emergency.
<b>Don'ts</b>	<b>Outcome</b>
Do not talk to anybody while operating machine.	Accident can be avoided due to carelessness.
Do not let any unauthorised person come in workplace.	Unauthorised person may become reason for accident due to his/her unawareness.
Do not run the machine if there is any part of machine is not ok.	May cause accident.
Do not run the machine without doing startup checks.	Any unchecked issue in machine may become reason of accident.
Do not run machine when intoxicated.	You can loose control over machine and accident may happen.

### 3.2.6: Responsibilities of tyre retreading operator

#### Explain



Following are the responsibilities of a tyre retreading - inspection & buffing operator:

1. He/she should not leave machine unattended, while machine is on.
2. He/she should not let any unauthorised person run the machine.
3. He/she should always run machine with all the safety measures.
4. He/she should never put hand or any other body part between the tyre spreader while machine is rotating.
5. He/she should not allow any co-worker to play near the machine.
6. He/she should not lean on control panel.
7. Immediately stop the machine if any problem is noticed in the machine.
8. Always inform supervisor without any delay for any abnormality or expected production loss.
9. Always inform supervisor without any delay for any expected quality problem.
10. Never bypass any safety control in machine.
11. Always check tyre specification with Job sheet before starting the operation.
12. Always check tyre specification before putting it in to machine.
13. Always do startup check on machine before starting the operation.
14. Never allow any helper or any other person to sleep or take rest in workplace near the machine.
15. Immediately inform supervisor in case of any emergency.
16. Always fill production details in job sheet or any other documentation accurately.

#### Activity-1



**Objective:** Practice of using tyre visual inspection machine.

**Procedure:**

- Provide a tyre inspection machine to individual participant.
- The participants needs to practice the process and then need to demonstrate the process of tyre inspection to the group.
- The facilitator should guide them during the process.

**Activity Outcome:**

- The participants will learn the inspection of tyre on a tyre visual inspection machine.
- Participant will be keen to know more about the tyre retreading process.

Activity	Time	Resources
Practice on tyre visual inspection machine	8 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos and images of tyre inspection process, pre-inspected and damage point identified samples of tyres, tyre visual inspection machine

Table 3.2.1

## Activity-1

**Objective:** Practice of operating Electric spark inspection machine.

**Procedure:**

- Provide a Electric spark inspection machine to individual participant.
- The participants needs to practice the process and then need to demonstrate the process of tyre inspection to the group.
- The facilitator should guide them during the inspection process.

**Activity Outcome:**

- The participants will learn the inspection of tyre on a Electric spark inspection machine.
- Participant will be keen to know more about the tyre retreading process.

Activity	Time	Resources
Practice on Electric spark inspection machine	8 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos and images of tyre inspection process, pre-inspected and damage point identified samples of tyres, Electric spark inspection machine

Table 3.2.2

## Activity-2

**Objective:** Practice of operating Shearography testing machine.

**Procedure:**

- Provide a Shearography testing machine to individual participant.
- The participants needs to practice the process and then need to demonstrate the process of tyre inspection to the group.
- The facilitator should guide them during the process.

**Activity Outcome:**

- The participants will learn the inspection of tyre on a Shearography testing machine.
- Participant will be keen to know more about the tyre retreading process.

Activity	Time	Resources
Practice of operating Shearography testing machine	8 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos tyre buffing process, pre-inspected and damage point identified samples of tyres, Shearography testing machine

Table 3.2.3





## Key Learning Outcomes

**At the end of this module, participant will be able to:**

1. Demonstrate machine checkup points before tyre buffing.
2. Demonstrate control panel checkup points before tyre buffing.
3. Discuss importance of cleaning & maintenance of the buffing machines.
4. Describe general operating instructions before tyre buffing.
5. Describe preparation points before tyre buffing.
6. Demonstrate the steps for performing tyre buffing.
7. Describe the safety precautions to be taken during tyre buffing.
8. Discuss Do's and Don'ts for tyre buffing operations.
9. Define Responsibilities of tyre buffing operator.

## UNIT 4.1: Initial Checks for Tyre Buffing

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Demonstrate machine check-up points before tyre buffing.
2. Demonstrate control panel check-up points before tyre buffing.
3. Discuss Importance of tyre buffing machine cleaning & maintenance.
5. Describe general operating instructions before tyre buffing.
6. Explain tyre buffing.
7. Explain steps involved in tyre buffing.

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flip charts
- Participant Handbook / Copies of Handout
- Tyre buffing machine
- Inspected old tyres for retreading

### Do

- Greet the participants for the day.
- Give Summary of previous Session.
- Ask for any doubts in previous Session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course

### Field Visit

- Take students for a field visit to the tyre retreading company.

## 4.1.1: An introduction to tyre buffing

### Ask

- Ask students what is tyre buffing?
- Ask students why tyre buffing is required in tyre retreading?

## Say

When you get a tyre that passes all the initial checks and is certified as a worthy candidate for retreading, your first job is to buff this tyre. Buffing is the process by which you remove all the old-worn tread on the tyre, and prepare the tire casing for the application of a new tread. Buffing also trues up (the roundness) your tyre casing. A buffed tyre gives you a textured surface on the tyre casing and this aids in proper adhesion with the new retread that you will later apply on this surface.

## 4.1.2: Start-up checks before tyre buffing

### Explain

Before starting the operation of tyre buffing, you should check all the aspects for trouble free tyre buffing.

### Explain

#### Machine check-up

1. Before starting the tyre buffing, the tyre retreading operator should him/herself check the operation of tyre buffing machine parts. He / she should ensure that all parts, like - loader, expendable hub, dust collector, control panel, buffing head are in physically ok condition.
2. Ensure machine is cleaned before running buffing cycle. If not, then it should be cleaned with a clean cloth and compressed air. Ensure that there is no dirt and dust on machine.
3. Check that there is power in the control panel and the machine is on.
4. Check working of tyre loader by running it for one cycle.
5. Check working of buffing head is working.
6. Check expendable hub is proper working.
7. Check that all the meters and equipment on machine are calibrated and nothing is overdue.

#### Control panel check-up

1. Ensure that you have full knowledge of control panel.
2. Ensure that power is on for control panel.
3. Ensure that all parameters are set as per machine & parameter sheet.
4. Ensure that all functions in control panel are functional.

#### General instruction for tyre buffing

1. Ensure that tyre available as per job sheet.
2. Ensure that tyre is clean and dry.
3. Ensure that cleaning and housekeeping of the workplace is proper. There is no material lying in the work area which is not needed for the tyre buffing process.
4. Ensure that floor is also cleaned for any chemical or oil spillage. So that there is no threat of slip/ fall hazard.

5. Ensure that tyre must be cleaned and dry before their buffing, a clean working surfaces is required, so that no nail, stone and any other foreign particles in tyre. This will also damage buffing head .
6. Ensure that you have the entire required tool for tyre buffing.
7. Ensure all the settings for a specific tyre, in tyre manual, they design ensure that the final retread. product provides peak performance, Be sure to checked the :-
  - Expandable rim number
  - Tread size
  - Standard or ECL
  - Radius
  - Trim angle
  - Cut depth
  - Measure shoulder left, Crown or right
  - Finished buffed circumference

### 4.1.3: Preparation before starting tyre buffing

#### Explain



There are some preparation which should be done before starting tyre Buffing –

1. Before starting the tyre buffing, the operator should be in full readiness and should not have mental tensions of any kind.
2. Operator must have full knowledge of all the tools that are needed for operating the machine, and same should be kept accessible in a toolbox.
3. Arrange all inspected tyres /size wise to be buffed in one row.
4. Once again Check tyre to be re- treaded on visually from outside and all 360 Degree.
5. Roll the tyre on the ground and check for defect like – bead for any damaged , sidewall for any crack , any sidewall hole , tread damaged , severe cut of tread, exposed fabric and all other as per company SOP.
6. Check if tyre has any mark with crayon or other marker so that all precaution can be taken before performing buffing operation.

## Activity-1

**Objective:** Initial checks demonstration of a tyre buffing machines

**Procedure:**

- The facilitator needs to demonstrate in the initial check points for tyre buffing machine.
- The facilitator should explain the importance of the check points of the machines
- The participants should make notes of points explained during the process.
- The facilitator should clarify any doubts in points noted by participants.

**Activity Outcome:**

- Participants will be able to learn the checking process of a tyre buffing machine.
- Participant will be keen to know more about the tyre retreading process.

Activity	Time	Resources
Initial checks demonstration of a tyre buffing machines	6 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos and images of tyre buffing process, pre-inspected and samples of tyres for buffing, stationary and portable buffing machine, buffing attachments, PPEs.

Table 4.1.1

## UNIT 4.2: Operating Instructions and Safety Precautions for Tyre Buffing

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Demonstrate the steps for performing tyre buffing.
2. Describe the safety precautions to be taken during tyre buffing.
3. Discuss do's and don'ts for tyre buffing operations.
4. Define responsibilities of tyre buffing operator.

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flip charts
- Participant Handbook / Copies of Handout
- Tyre buffing machine
- Inspected old tyres for retreading

### Do

- Greet the participants for the day.
- Give Summary of previous Session.
- Ask for any doubts in previous Session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course

### Field Visit

- Take students for a field visit to the tyre retreading company.

## 4.2.1: Tyre buffing process

### Ask

- Ask students what is tyre buffing?
- Ask students why tyre buffing is required in tyre retreading?

## Explain

There are two types of tyre buffing procedures:

1. Bead to bead where tread and sidewall are removed during the buffing process in accordance with detailed specifications.
2. Removal of tread rubber only to specification, principally for pre-cured retreading.

The texture of the buffed surface is important. A buffed surface having deep cuts or lacerations is not suitable and will result in marginal adhesion. Most buffing machines inflate casings to between 1 to 2 bars. This is essential to provide firmness when the tyre is in contact with the rasp, influencing the texture and profile obtained and preventing scorching.

Scorching is identified by a smooth, tacky surface, often with a bluish tinge to the rubber. White smoke emanating from the buffing surface is also an indication of potential scorching.

The principle of the buffing machine is to cut or rasp the outside circumference of the casing to a true circle. If any degree of out-of-roundness exists in the casing an uneven thickness results causing an out-of-balance condition.

When cross buffing the rasp is moved backwards and forwards smoothly across the casing surfaces avoiding gouging and grooving. Well-chosen rasp blades and spacer combinations as determined for the particular machine provide the desirable texture. As a general rule the more blades used and the faster the casing revolves, the better the surface temperature. Deep scoring and lacerations must be avoided.

After tyre has been inspected and all injuries have been marked, he is ready for buffing, buffing is the process by which all of the old worn tread is removed, preparing the tire casing for the application of a new tread, buffing also proves up the tyre casing.

To begin the buffing operation the operator uses an overhead tire lift to mount the tyre on an expandable hub, next tyre is inflated with normal running shape to ensure it is buffed to the correct profile and radius.

follow these steps for tyre buffing:-

1. Ensure tyre is clean and dry and no foreign particles in tyre.
2. Lift the tyre from one bead side using hoist and put on roller type buffing roller / table which has lamp / light attached.
3. Place the tyre on Expandable Hub with the help of lifting equipments.
4. Expand the hub in normal position.
5. Mark tread portion with marker – guideline for buffer to cut tread manually as per SOP.
6. Ensure dust and pollution control system is working.
7. Rotate tyre to confirm that it is properly mounted on the correct expandable hub and inflated appropriately.
8. Hold the tyre and start chipping top tread slowly – slowly
9. Now you're ready to start buffing, when you start to buff the tire, always started the highest spot on the Crown of the tyre, this options ensure that the buff is not overloaded.
10. Continue this operation all round with eye measurement and keeping left out portion.
11. when it tempting to buff to low spot to a high spot, buff across the crown in one direction.
14. Next make a pilot skive to check to the proper under tread depth, locate the belt package then use a tread depth gauge to measure the thickness of the under tread.
15. In next step in buffing process is the shoulder treaming for conventional top tread, and shoulder conjuring for tread for ECL tread.
16. Now take buffing stone in hand ( it is rotating/ RPM with high speed). Hold buffing toll by both hand in such a way that it should not have slippage while buffing as it need some human rated pressure. PC13. Start buffing uneven hand cut left out tread portion uniformly from one end to another end and circumferentially.

17. Extra care must be taken wherever defect / mark is given by carcass inspecting inspector.
18. With the help of lamp / light see the condition of inside portion of the tyre, Make carcass top surface rough with teathed grinder, Clean manually and remove all lose dust rubber particle with the help of brush / by blowing air blast.
19. Once again check tyre circumferentially for any non - uniformity on buffing.
20. Unload tyre with the help of Hoist / table.
21. Mark Ok mark on tyre and keep in OK row for next operation.
22. In case tyre is not suitable for re tread –put REJECT mark.

## 4.2.2: Safety precautions during tyre buffing

### Explain

There are so many hazards in tyre buffing process; hence it is necessary to take all safety precautions.

Following are some of the safety precaution, which you must take while doing tyre buffing –

1. Always wear safety shoes.
2. Always wear Safety helmet.
3. Always wear safety glasses for eye protection and earmuffs for ears protection.
4. Ensure that always rotate the tyre away from your body parts.
5. Read and understand all safety related instructions before operating the machine.
6. Take appropriate safety measures while load and unload the tyre. Use suitable lifting devices for moving tyres.
7. If there are any stones or objects remaining in the tread service they must be removed to prevent potential injury and damage to the machine
8. Carefully handle buffing shaft with grinder / tool which has sharp teeth
9. Make sure that the pollution and control system is on and functioning it provides a steady stream of water to the rest blades which prevent successive heat build up on the tire as the tread of shape off.
10. be careful if too much under tread is left on the casing it's very difficult skive the casing, excessive under tread can also cause too much heat generation when the tyre and use and lead to a retread failure, conversely not enough under tread and negatively impact bond between the casing and the new tread.
11. final buff texture or the roughness of the buff surface must be a RMA 3 or 4 to meet quality standards, you can check the texture by using the RMA texture chart these texture were found a result in optimal bonding characteristics.
12. be sure to check the texture of shoulder crown and any skiving area to make sure they were as per standard or guidelines.
13. Be sure to check for the proper tread sized using the tread based ruler,if it incorrect tread size is applied to the casing it can cause excessive stress on the casing causing it to fail in service.

## Activity-1

**Objective:** Practice of operating stationary buffing machine.

**Procedure:**

- Provide a tyre buffing machine to individual participant.
- The participants needs to practice the process and then need to demonstrate the process of tyre buffing to the group.
- The facilitator should guide them during the buffing process.

**Activity Outcome:**

- The participants will learn the buffing process with the help of a stationary buffing machine.
- Participant will be keen to know more about the tyre retreading process.

Activity	Time	Resources
Practice of operating stationary buffing machine.	8 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos and images of tyre buffing process, pre-inspected and samples of tyres for buffing, stationary buffing machine, buffing attachments, PPEs.

Table 4.2.1

## Activity-2

**Objective:** Practice of operating portable buffing machine.

**Procedure:**

- Provide a tyre portable machine to individual participant.
- The participants needs to practice the process and then need to demonstrate the process of tyre buffing to the group.
- The facilitator should guide them during the buffing process.

**Activity Outcome:**

- The participants will learn the buffing process with the help of a portable buffing machine.
- Participant will be keen to know more about the tyre retreading process.

Activity	Time	Resources
Practice of operating portable buffing machine..	8 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos and images of tyre buffing process, pre-inspected and samples of tyres for buffing, portable buffing machine, buffing attachments, PPEs.

Table 4.2.2







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Transforming the skill landscape

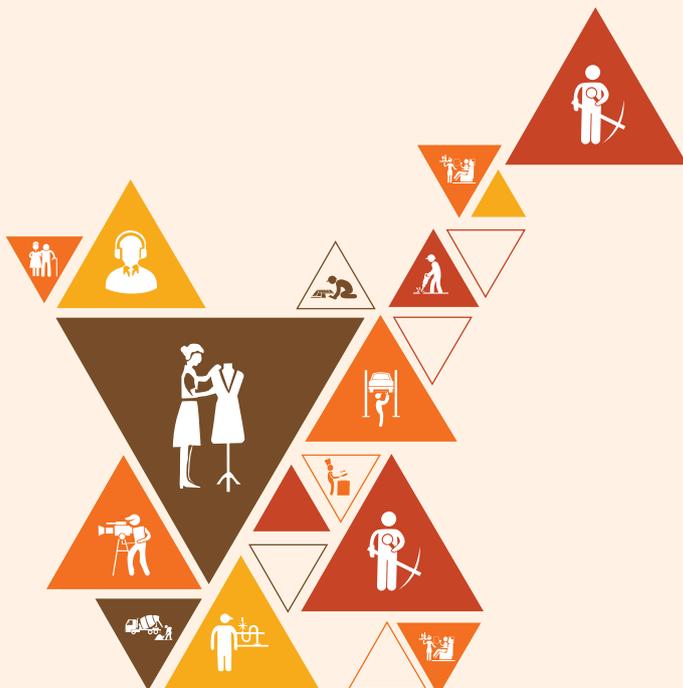


# 5. Carry out Housekeeping in Rubber Product Manufacturing

Unit 5.1 – Need and Benefits of Housekeeping

Unit 5.2 – '5S' Methodology of Housekeeping

Unit 5.3 – Disposal of Rejected Tyre



RSC/Q5001

## Key Learning Outcomes

**At the end of this module, participant will be able to:**

1. Explain what is housekeeping.
2. Define importance of housekeeping.
3. Describe purpose of housekeeping.
4. Explain benefits of housekeeping.
5. Explain what is '5S'.
6. Define each 'S' and its meaning.

## UNIT 5.1: Need and Benefits of Housekeeping

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Explain what is housekeeping.
2. Define importance of housekeeping.
3. Describe purpose of housekeeping.
4. Explain benefits of housekeeping.

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flipcharts
- Participant handbook / Copies of handout
- Different cleaning equipment

### Do

- Greet the participants for the day.
- Give summary of previous session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

## 5.1.1: What is Housekeeping?

### Ask

- Ask students what is housekeeping.

### Say

Housekeeping is to keep all things in place at work place and keep the area clean and tidy.



*Fig. 5.1.1. Housekeeping at workplace*

## 5.1.2: Importance of housekeeping

### Ask



- Ask students what is the importance of housekeeping.
- Ask students what are the benefits of housekeeping.

### Elaborate



Effective housekeeping can eliminate some workplace hazards and help get a job done safely and properly. Poor housekeeping can frequently contribute to accidents by hiding hazards that cause injuries. If the sight of paper, debris, clutter and spills is accepted as normal, then other more serious health and safety hazards may be taken for granted.

Housekeeping is not just cleanliness. It includes keeping work areas neat and orderly; maintaining halls and floors free of slip and trip hazards; and removing of waste materials (e.g., paper, cardboard) and other fire hazards from work areas. It also requires paying attention to important details such as the layout of the whole workplace, aisle marking, the adequacy of storage facilities, and maintenance. Good housekeeping is also a basic part of accident and fire prevention.

### TIP



Effective housekeeping is an ongoing operation: it is not a hit-and-miss cleanup done occasionally. Periodic "panic" cleanups are costly and ineffective in reducing accidents.

## 5.1.3: Purpose of Housekeeping

### Explain



Poor housekeeping can be a cause of accidents, such as:

1. Tripping over loose objects on floors, stairs and platforms
2. Being hit by falling objects
3. Slipping on greasy, wet or dirty surfaces
4. Striking against projecting, poorly stacked items or misplaced material
5. Cutting, puncturing, or tearing the skin of hands or other parts of the body by projecting nails, wire or steel strapping

To avoid these hazards, a workplace must "maintain" order throughout a workday. Although this effort requires a great deal of management and planning, the benefits are many.

## 5.1.4: Benefits of housekeeping

### Elaborate



Effective housekeeping results in:

1. Reduced handling to ease the flow of materials
2. Fewer tripping and slipping accidents in clutter-free and spill-free work areas
3. Decreased fire hazards
4. Lower worker exposures to hazardous substances (e.g. dusts, vapours)
5. Better control of tools and materials, including inventory and supplies
6. More efficient equipment cleanup and maintenance
7. Better hygienic conditions leading to improved health
8. More effective use of space
9. Reduced property damage by improving preventive maintenance
10. Less janitorial work
11. Improved morale
12. Improved productivity (tools and materials will be easy to find)

### Demonstrate



- Demonstrate process of doing housekeeping.
- Demonstrate different housekeeping tools.
- Demonstrate difference between good and bad housekeeping and benefits of good housekeeping.

### Elaborate



#### Do's

- Minimize fire hazards by keeping workplace free of accumulated combustible materials and waste.
- Ensure that exits and aisles are clear of obstructions, to allow easy evacuation of the building.
- Place all trash and scrap in proper containers.
- Keep oily rags in covered metal containers.
- Dispose of hazardous materials in approved marked containers.
- Store equipment and materials in their assigned location.
- Clean air vents and filters to maintain ventilation efficiency.
- Ensure that boxes, drums, and piles are located on a firm foundation and properly stacked.
- Clean up tools and unused materials after finishing a job or before leaving the job site.
- Clean up spills promptly according to the procedures, using personal protective equipment (PPE) wherever necessary.

- Report hazards such as uneven boards, cracks, burnt-out lights. fix immediately.
- Bundle hoses and cables when not in use.
- Place empty containers and pallets in designated locations.
- Dump small containers into larger ones.
- Keep only enough combustible materials at job site for job at hand.

## Elaborate

### Don'ts

- Do not pile material around fire extinguishers, sprinklers, or emergency exits.
- Do not leave clean-up to last few minutes of shift or day.
- Do not clean equipment without "locking out."
- Do not reach into waste containers. Dump contents or remove bag.
- Do not blow off dust with compressed air. Use a vacuum or brush.
- Do not collect broken glass and metal straps in plastic bags.
- Do not use bare hands when collecting waste. Wear gloves to avoid cuts and splinters.
- Do not place materials on stairs.
- Do not use boxes as chairs or ladders.

## Activity-1

**Objective:** Practice of workplace cleaning.

### Procedure:

- Demonstrate the process of workplace cleaning using cleaning aids, such as: broom, cleaning brush, cleaning solvents, etc.
- The participants needs to practice the process and then need to demonstrate the workplace cleaning.
- The facilitator should guide them during the process.

### Activity Outcome:

- The participants will learn the workplace cleaning.
- Participants will build confidence by doing hands on experience.

Activity	Time	Resources
Practice of workplace cleaning	8 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos of workplace cleaning, cleaning aids: cleaning rags, cleaning solvents, broom, cleaning brush, etc., PPEs.

Table 5.1.1

## UNIT 5.2: '5S' Methodology of Housekeeping

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Explain what is '5S'
2. Define each 'S' and its meaning

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flipcharts
- Participant Handbook / Copies of handout
- Different cleaning equipment

### Do

- Greet the participants for the day.
- Give Summary of previous Session.
- Ask for any doubts in previous Session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course

## 5.2.1: What is '5S'?

### Ask

- Ask students what are the 5S for housekeeping?
- Ask students, in which country 5S methodology originated?

### Explain



Fig. 5.2.1. 5S cycle

'5S' is a system of steps and procedures that can be used by individuals and teams to arrange work areas in the best manner to optimize performance, comfort, safety, and cleanliness. The 5S method is the beginning of each program for improvement. It's a tool for helping the analysis of processes running on the workplace. The 5S is the methodology of creating and maintaining well organized, clean, highly effective and high quality workplace. It results in an effective organization of the workplace, reduction of work, elimination of losses connected with failures and breaks, improvement of the quality and safety of work. The philosophy of the 5S has its roots in Japan. The name 5S is the acronym of five Japanese words of the following meanings:

## Explain

### 1 - S - Seiri – Sorting

Through the suitable sorting it is possible to identify the materials, tools, equipment and necessary information for realization of the tasks. Sorting eliminates the waste material (raw materials and the other materials), non-conforming products, and damaged tools. It helps to maintain the clean workplace and improves the efficiency of searching and receiving things, shortens the time of running the operation.

The 1S rule's proceedings:

a) On the first stage one should answer the below Control Questions:

- Are unnecessary things causing mess at the workplace?
- Are unnecessary remainders of materials thrown anywhere in the workplace?
- Are tools or remainder production material lying on the floor (in the workplace)?
- Are all necessary things sorted, classified, described and kept at their own place?
- Are all measuring tools properly classified and kept?

a) On the basis of the answers to the above questions, it is possible to estimate the workplace in terms of 1S rule. If for any question answer is yes, we should execute sorting of things at the workplace.

b) On the second stage one should execute the review of all the things, which are at the workplace and group them according to the definite system. According to carried out sorting, we should eliminate the things from the workplace, which were found “unnecessary”.

c) To make permanent the usage of 1S rule, the so-called Program of the Red Label is followed. It means giving the red label to things, which operator will recognize as useless within his workplace. This label will make possible not only the elimination of the given things, but it will also ensure that unnecessary things does not get accumulated at work place.

### 2S – Seiton – Set in order

Especially important is visualization of the workplace (e.g.. painting the floor helps to identify the places of storage of each material or transport ways, drawing out the shapes of tools makes possible the quickly putting them aside on the constant places, coloured labels permit to identify the material, spare parts or documents etc.).

## Explain

Estimating the workplace in terms of 2S rule that is setting things in order, serve the following Control Questions: -

- Is position (location) of the main passages and places of storing, clearly marked? Are tools segregated according to their regular or special use? Are all transport palettes stored till the proper height?
- Is anything kept in front of fire devices?
- Has the floor any irregularity, cracks or causes other difficulties for the operator's movement?

Things used occasionally and seldom should be on the workplace but outside the direct using sphere. Their distance and location from the place of work should depend on the frequency of using these materials or tools. Places of storage should be marked in a manner making their quick identification possible. We can use coloured lines, signs or tool boards.

### **3S - seiso – Shine**

Regular cleaning permits identification and elimination of sources of disorder and maintain a clean workplace. During cleaning, the cleanliness of machine, workplace and floor, tightness of equipment, cleanliness of lines, pipes, sources of light, current data, legibility and comprehensibility of delivered information etc, are checked.

Implementing the 3S rule:

The first step of realization of the 3S rule is renovation of the workplace. It is assumed that “the first cleaning” forces the implementation of the two previous rules. The usage of the 3S rule relies on everyday’s regular cleaning of the workplace. It is executed by the operator of the given workplace.

For estimating the workplace in terms of the 3S rule, that is cleaning the workplace, serve the following control questions:

- Are the oil stains, dust or remains of metal found around the machine or on the floor?
- Is machine clean?
- Are lines, pipes etc. clean, do they require repairing?
- Are oil pipe outlets clogged by some dirt?
- Are sources of light clean?

### **4S - Seiketsu - Standardize**

Worked out and implemented standards in the form of procedures and instructions permit to keep the order at the workplaces. Standards should be very communicative, clear and easy to understand. Regarding this, during preparation and improving, we should involve all participants of the process on the given workplace, it means direct workers. The group knows the best of its own activities, and process of elaboration and after that, usage gives them possibility of understanding the essence and each aspect of the operation. In the aim of assuring all the easy access, obligatory standards should be found in constant and visible places.

It is assumed that standards should not be implemented only in the typical operational processes e.g. production, maintenance, stores, but also in the administrative processes, for example: book-keeping, customer service, human resources management, or secretariat service.

## Explain

### 5S - Shitsuke - Sustain

Implementation of 5S idea will demand from workers, compact self-discipline connected with the rules of regularity in cleaning and sorting. It leads to an increase in the consciousness of staff, and decrease in the number of non-conforming products and processes, improvements in the internal communication, and through this an improvement in the human relations.

It is also important to understand the need of executing the routine inspections of the 5S rule. This inspection is executed with the help of so-called Check Lists and on its basis the radar graph of the 5S is created, which serves to estimate the workplace. The inspection of realization of the 5S rule is executed once a month by a chosen team implementing the 5S rule – which is also called the control team.

## Demonstrate

- Demonstrate process of doing 5S.
- Demonstrate importance of each 'S' in housekeeping.
- Demonstrate benefits of good housekeeping.

## Activity-1

**Objective:** Practice of 1S (from 5S philosophy) activities in a tyre retreading shop.

**Procedure:**

- Demonstrate the process of 1S activities.
- The participants need to practice the process and then need to demonstrate the 1S activities.
- The facilitator should guide them during the process.

**Activity Outcome:**

- The participants will learn to carry out the 1S activities.
- Participants will build confidence by doing hands on experience.

Activity	Time	Resources
Practice of 1S (from 5S philosophy) activities in a tyre retreading shop	4 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos of 1S activities, PPEs.

Table 5.2.1

## Activity-2

**Objective:** Practice of 2S (from 5S philosophy) activities in a tyre retreading shop.

**Procedure:**

- Demonstrate the process of 2S activities.
- The participants needs to practice the process and then need to demonstrate the 2S activities.
- The facilitator should guide them during the process.

**Activity Outcome:**

- The participants will learn to carry out the 2S activities.
- Participants will build confidence by doing hands on experience.

Activity	Time	Resources
Practice of 2S (from 5S philosophy) activities in a tyre retreading shop	4 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos of 2S activities, PPEs.

Table 5.2.2

## UNIT 5.3: Disposal of Rejected Tyre

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Explain challenges in tyre disposal.
2. Describe tyre recycling.
3. Describe the uses of recycled tyre.

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flip charts
- Participant Handbook / Copies of handout
- Rejected tyre for disposal / tyre buffing waste
- Field visit to tyre dumping yard
- Field visit to tyre recycling plant

### Do

- Greet the participants for the day.
- Give Summary of previous session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

### Field Visit

- Take Students for a field visit to the tyre dumping yard.

## 5.3.1: Rejected or scrap tyre

### Ask

- Ask students what could be the disposal methods for scrapped or rejected tyre?
- Ask students why scrap tyre disposal is important?

## Say

Tyre is a commodity where reworking for any manufacturing defect is very difficult. Any rework might show up or may result in field failure. since tyre is a safety product, hence all companies take utmost care during manufacturing process and ensure that only best quality tyres are produced. With all the care still some rejection happens. We need to handle the rejected tyres carefully, since it is a hazardous item, if not disposed properly.



Fig. 4.2.1. Rejected tyre lot

## 5.3.2: Disposal of scrap tyres

### Say

Every company has its own disposal procedure for disposing defective tyres, please read the procedure carefully. Tyre disposal is a difficult process and it has its own challenges –

### Explain

#### **Fire Hazard**

As we know tyre is made of rubber and easily combustible. Once it catches fire, it may burn for long time till it gets burnt fully. Due to this hazard, it is not advisable to dump it in any open space.

#### **Space Occupying**

Due to its volumetric construction and more than 75% void space, Tyres are not very easy to dump in landfills also. It consumes more space as compared to other scraps.

#### **Source of land pollution**

Tires can trap methane gases, causing them to become buoyant, or bubble to the surface. This 'bubbling' effect can damage landfill liners that have been installed to help prevent landfill contaminants from polluting local surface and ground water.

#### **Hazards of stockpiling**

Stockpiling of tyre is also a big health and safety risk. Fires incidents are easy in tyre and can occur anytime. It may burn for long time and can create heavy pollution in the air. An additional health risk is, tyre piles provide harborage for vermin and a breeding ground for mosquitoes that may carry diseases. Illegal dumping of scrap tyres pollutes ravines, woods, deserts, and empty lots.

### 5.3.3: Recycling of tyre

#### Explain



Recycling helps to reduce the number of tyre scrap in storage. Shredded tyres are now being used in landfills, replacing other construction materials, for a lightweight back-fill in gas venting systems, leachate collection systems, and operational liners. Shredded tyre material may also be used to cap, close, or daily cover landfill sites. Scrap tyres as a back-fill and cover material are also more cost-effective, since tyres can be shredded on-site instead of hauling in other fill materials. Big companies have their own in-house plants for tyre recycling and small organisations out source this activity.



Fig. 4.2.6. Shredded tyre for recycling

#### Field Visit



- Take students for a field visit to the tyre recycling unit.

#### Team Activity-1



**Objective:** Rejected material handling demonstration

**Procedure:**

- Demonstrate the participants the correct way of handling a rejection.
- Ask the participants to make a pair of 2 participants.
- Provide them a rejected lot of tyres.
- Ask them to demonstrate the complete set of activities for handling a rejection, such as: material identification, tagging the material, and movement to rejection stores.

**Activity outcome:**

- You will be able to test the knowledge of participants for handling a rejection.
- Participants will get opportunity to work in a real shop floor scenario.

Activity	Time	Resources
Rejected material handling demonstration	4 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos of rejection handling, rejected tyres, material handling equipment, rejection storage area, PPEs.

Table 5.2.1

#### Answers

1. c    2. a    3. a    4. d    5. d    6. d    7. b    8. a    9. c    10. d







## Key Learning Outcomes

### **At the end of this module, participant will be able to:**

1. Explain what is documentation.
2. Describe the importance of documentation.
3. Define Purpose of documentation.
4. Explain Types of documentation.
5. Describe common documentation used in tyre industry.
6. Explain what is reporting.
7. Describe importance of reporting.
8. Explain about government act and bylaws.
9. Describe about rules.
10. Define meaning of Policies and Guidelines.
11. Describe meaning of procedure.
12. Explain what is work instruction.
13. Define what is communication.
14. Describe communication process.
15. Explain problems in communication.
16. Describe various communication barriers.
17. Explain traits of active listening.
18. Discuss points of good writing skill.
19. Explain how to resolve conflict with team member.
20. Discuss organisational procedures for reporting and documentation.
21. Decide priority of work required to be done.
22. Describe how to select work to do from pending work.

## UNIT 6.1: Day to Day Activities Documentation

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Explain what is documentation.
2. Describe the importance of documentation.
3. Define purpose of documentation.
4. Explain types of documentation.
5. Describe common documentations used in tyre industry.
6. Explain what is reporting.
7. Describe importance of reporting.

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flipcharts
- Participant Handbook / Copies of Handout
- Sample of documentations
- Sample of reports
- Sample of procedure
- Sample of work instructions

### Do

- Greet the participants for the day.
- Give Summary of previous session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts, now and during process of this course.

## 6.1.1: What is documentation?

### Ask

- Ask students what is documentation?
- Ask students, as per them what activities in tyre moulding should be documented?

## Explain



Primarily creating records for any process or activity is called documentation. For example – creating inspection report for any product shall be called documenting the actual dimensions for the product. Also if we are creating minutes for any meeting, that will also be called as documenting the outcome of meeting. In any organisation there are many activities for which we need to document. For example – Production record, Part inspection report etc. This is required for reviewing the outcome later on. Unless these are documented, it is not possible to retrieve again upon requirement. In other words, recording any useful or required data is called, documentation.

### 6.1.2: Importance of documentation

#### Say



As mentioned earlier, documentation helps in reviewing the activities later on. There are lot of purpose and use of documentation, such as –

1. Production recording
  - to review production performance
  - To find out consumption of material
  - To report production quantity to finance department
  - To take order against produced quantity
2. Inspection Report
  - to verify that all dimension are ok or not ok
  - To report quality data to supervisor
  - To keep record, in case later on any issue is reported in part
  - To get deviation from supervisor, dimensional variation is minor

### 6.1.3: Purpose of documentation

#### Say



It is very important to make document in any industry. Some of key purposes for documentation are –

1. For creating record for any process outcome, which can be retrieved in case of any requirement, such as part failure. Ex- Process parameter report.
2. For creating record for any process outcome, which need to be shown to supervisor. Ex- Part Inspection report.
3. For creating record for any meeting outcome, which can be retrieved in case of any dispute later on.
4. For reporting to any external agencies. For example – filing records to pollution control dept.
5. For follow up and analysis as may be required from time to time.
6. For procurement of quality materials by avoiding the sources which supplied the ingredients.
7. For rectification of the machines and accessories - when were they in operation when the defects had occurred.
8. For retraining the operators who were operating the machine when the defects occurred.
9. To change the SOP to avoid re occurrence of the same defects.
10. To plan for adaptation of new processes and new equipment. Lack of record keeping will result in breakdown of monitoring system.

## 6.1.4: Types of documentation

### Explain



Normally there are two types of documentation:

1. Standard documentation
2. Non-Standard documentation

#### **Standard documentation:**

All predefined report format are called Standard documentation. It could be for inspection for product, attendance log etc. These are used for repeated nature of work.

#### **Non-Standard documentation:**

All the documentation, which is done without any format is called Non-Standard Documentation. Writing mail or memo for any incident comes in this category.

## 6.1.5: Common documentation in tyre industry

### Say



As required in any other manufacturing industry, Tyre industry also has some common documentation. Some of them are following –

1. Production plan
2. Production report
3. Product inspection report

The above documentation is important from the point view of traceability, follow up action, statistical analysis and preventive and corrective actions.

## 6.1.6: What is reporting?

### Ask



- Ask students what is reporting?
- Ask students, as per them what activities should be reported to Supervisor and when?

### Explain



To present data or information to supervisor is called 'Reporting'. Reporting can be 'Scheduled Reporting' or 'Unscheduled Reporting' also. Scheduled reporting is done on regular basis, such as production reports or machine breakdown reports. Normally, 'Scheduled Reports' have set format and time of reporting. On the other hand 'Unscheduled Reporting' is need based – based on supervisor requirement or while junior feel need of sending some important information to superiors.

## 6.1.7: Importance of reporting

### Elaborate



In any organisation reporting is very important. Based on reporting only senior management remains aware of day-to-day activities. Reporting is necessary to run operation as well as it is very essential for making improvements in operations. For Example – through reporting only management shall come to know any downfall in production. Based on that report only management can take some action to improve productivity.

Similarly, without reporting, supervisor will not be aware whether production is completed against plan or not. He or she can take decision only when he / she gets production report.

## 6.1.8: Example of some reports in industry

### Explain



EPDM RUBBER		
GRADE	PURE	
FINISH	SMOOTH BOTH SIDES	
COLOR	BLACK	
TECHNICAL SPECIFICATIONS		
Test Standard	GB/T5574-94	REMARK
Test Temperature	24℃	
Item	Test	
Colour	Transparent	
Tensile Strength at Break	3MPA	
Hardness	65±5 Shore A	
Elongation at Break	150-200%	
Density	1.5g/cm <sup>3</sup>	
TEMPERATURE RANGE	-20℃ TO 100℃	
Test Conclusion	Across the above tests, the result is up to the Chinese standard of GB/T5574-94. It is the eligible product.	
Remark	Seal for inspection report	
	CUT EDGGE ROLLS	

Fig. 6.1.3. Rubber test report

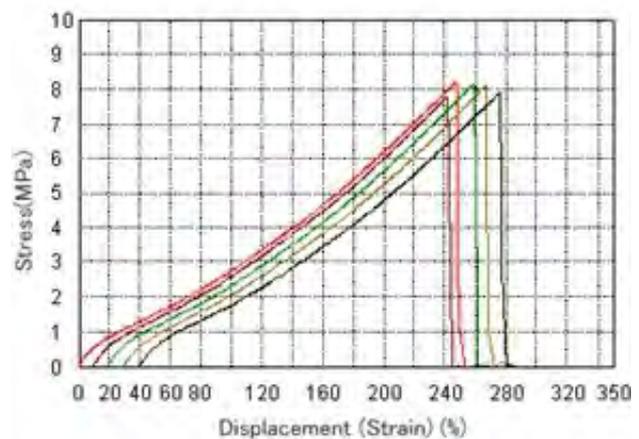


Fig. 6.1.4. Rubber stress / strain report

### Demonstrate



- Demonstrate different types of documents being used in industry.
- Demonstrate filling up of documents under responsibility of tyre retreading - inspection & buffing operator.

## Activity-1

**Objective:** Practice of tyre inspection and buffing production report making.

**Procedure:**

- Demonstrate the process of tyre inspection and buffing production report making.
- The participants need to practice the process and then need to demonstrate the production report making.
- The facilitator should guide them during the process.

**Activity Outcome:**

- The participants will learn to make tyre inspection and buffing production report.
- Participants will build confidence by doing hands on experience.

Activity	Time	Resources
Practice of tyre inspection and buffing production report making	3 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos of production information recording, production report formats.

Table 6.1.1

## UNIT 6.2: Organisation Procedure for Reporting and Documentation

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Explain about government act and Bylaws.
2. Describe about rules.
3. Define meaning of policies and guidelines.
4. Describe meaning of procedure.
5. Explain what is work instruction.
6. Discuss organisational procedures for reporting and documentation.

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flipcharts
- Participant handbook / Copies of handout

### Do

- Greet the participants for the day.
- Give summary of previous session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

### 6.2.1: Government acts and bylaws



Fig. 6.2.1. Rules pyramid

**Ask**

- Ask students their understanding of Law, Rule, Policy, procedure and work instruction?
- Ask students, why it is important to have procedure and work instructions in an organisation?

**Explain**

Government acts are those acts and laws, which are made by government and following these Acts are compulsory. There is a penalty for not following government Acts. Examples of this is income tax Act, Sales Tax Law, etc.

**6.2.2: Rules****Explain**

Authoritative statement for what to do and what not is called rule. It is given by an appropriate person of body. The rule is applicable in that forum or body which is controlled by rule making person. This can be any organisation, society or community of persons.

**6.2.3: Policies and Guidelines****Explain**

A policy is a definitive principle or rule that an organisation must follow to reach its long-term goal. Typically, a policy marks out an organisation's views with respect to a particular matter.

Company guidelines establish the rules of conduct within an organisation. Guidelines define the responsibilities of both the employees and employer. Company policies and procedures are made in place to protect the rights of employees as well as the business interest of employers.

Employees, including managers and supervisors, are expected to uphold company policy and work according to it. The employees should complete tasks accurately by being flexible and adapting to work plans and procedures as per the company policies.

Most organisations have a handbook of policies and guidelines to be referred to by employees, as shown in following figure:

Make sure you take a look at the handbook thoroughly before within the first few days of joining the job. You can request for the handbook to your supervisor.

Some typical company guidelines include:

- Employee code of conduct (for example, dress code and behavioral approach)
- Attendance policy (for example, time of entry into and exit from the workplace)
- Leave policy (for example, different types of leaves)
- Workplace safety (for example, understanding and following fire safety guidelines)

- Harassment policy (for example, engaging in a course of unwelcoming comment or conduct against a worker in a workplace)
- Substance abuse policy (for example, ban of smoking, alcohol, and drugs)
- Property abuse policy (for example, damaging company assets)

## 6.2.4: Procedure

### Explain

Procedure is a broad guideline for carrying out any activity. In order to eliminate ambiguity in carrying out regular activities all organisation make procedures for all day-to-day activities. All employees should read these procedures carefully before carrying out those activities.

Procedures help an organisation to:

- Provide a framework for actions that help employees quickly understand what is expected of them.
- Stop employees from discussing and re-discussing the same issues every time they arise.
- Help in legal matters.
- Act as a tool to improve the quality.
- Create goodwill and trust among employers, customers and clients.
- Help employees behave in a professional and responsible manner.

## 6.2.5: Work Instruction

### Explain

Work Instruction is detailed form of procedure. It has step-by-step details of method for carrying out that activity.

## 6.2.6: Organisational Procedure for Reporting and Documentation

### Explain

It is important to keep your supervisor and co-workers informed about any issues related to malfunctioning of equipment, task completion difficulties and time lines, progress and any other work related issues. Such issues may include:

1. Volume of work.
2. Quality of work.
3. Time within which work needs to be completed.

Since reporting and documentation is very important, hence it can not be left on people to decide that in which format and structure they would document and report.

An organisational procedure has details of all requirements of documentation and reporting. Such as –

1. Format of report
2. Who to create
3. To whom it should be submitted
4. Frequency of reporting
5. Place of filing documentation
6. Retention duration of document to keep

## Demonstrate



- Demonstrate hierarchy of tyre retreading industry and position of tyre retreading - inspection & buffing operator.
- Demonstrate reporting process in different situations of tyre retreading operation.

## Activity-1



**Objective:** Practice of interpretation and use of work instructions for tyre inspection and buffing.

**Procedure:**

- Demonstrate the participants how to read and infer the instructions from a work instruction
- Provide them an activity related to tyre building and curing, equipment, raw material and work instruction.
- Ask them to demonstrate the use of given work instruction for different activities such as: tyre inspection, tyre buffing, etc.
- The facilitator should guide them during the process.

**Activity Outcome:**

- The participants will learn to use the work instructions for tyre inspection and buffing.
- Participants will build confidence by doing hands on experience.

Activity	Time	Resources
Practice of interpretation and use of work instructions for tyre inspection and buffing.	3 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos related to work instruction, tyre inspection and buffing equipment, consumables and worn tyres for inspection and buffing, PPEs.

Table 6.2.1

## UNIT 6.3: Communication in Organization

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Define what is communication.
2. Describe communication process.
3. Explain problems in communication.
4. Describe various communication barriers.
5. Explain traits of Active Listening.
6. Discuss points of good writing skill.
7. Explain how to resolve conflict with team member.

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flipcharts
- Participant Handbook / Copies of Handout

### Do

- Greet the participants for the day.
- Give Summary of previous Session.
- Ask for any doubts in previous Session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course

## 6.3.1: What is Communication?

### Explain

Communication is exchange of information between people. It can be in the form of oral words, written words, drawings or physical actions. Communication is essential to express ideas and thoughts to friends, family, co-workers, and customers. Communication also plays a major role in information exchange and decision-making.

## 6.3.2: Types of Communication

### Explain



There are two types of Communication -

1. Verbal
2. Non- Verbal

**Verbal Communication** - When information is exchanged between the parties through words, it is called verbal communication. It is a word-based communication. Verbal Communication has two types –

1. Written Communication, and
2. Oral Communication

**Written Communication** - When a message is exchanged or communicated in a written form, it is called written communication. It is also a word based communication. It is widely used when the permanency and record of the message are important and when the audience stays at a distance. It takes different forms like letters, memos, reports etc.

**Oral Communication** - When a message is exchanged between the parties orally, it is called Oral Communication. It is also a word-based communication but not in written form rather in verbal or oral form. Major forms of Oral Communication include conversation, interview, telephone, speech etc.

**Non-Verbal Communication** - Communication without using words is called non-verbal communication. It is not a word-based communication. It does not use any written or spoken words but uses symbols, body language, color etc. to convey message. Non Verbal Communication can be visual, audio-visual and silent.

## 6.3.3: Problems in Communication

### Explain



In the process of communication, care has to be taken so as to avoid communication barriers that can come up either consciously or unconsciously. Communication barrier can cause losses to a company in terms of money and productivity. Without good communication, a company is unable to exchange information essential to daily operations. But at times, people fail to understand communication. Following are some of the symptoms of communication problems in an organization:

- Lack of teamwork
- Poor planning or workload
- Insufficient resources and support
- Lateness
- Poor work quality
- Difficult people

### 6.3.4: Common barriers of communication

#### Explain



**Assumption** - Generally senders forget to communicate complete information to the receiver assuming that the receiver would already know what has to be done. On the other hand, receiver might assume an entirely different scenario causing a barrier in communication.

**Use of Jargons** - Some people are in the habit of using jargons in their communication message. But they fail to understand that their jargons may not be clear to the receiver of the message. The receiver might misunderstand them causing a barrier in communication.

**Incomplete Sentences** - At times, people leave their sentences incomplete, like “I wanted to go but...”. This leaves the receiver with numerous assumptions and the exact message cannot be conveyed.

**Psychological Barrier** - The state of mind and mood of the sender and the receiver also affect the message delivery. If a person is in a bad mood, then a positive message can also sound negative. Senders may also spoil the message delivery by over communication the message, that is, communicating the same message through different channels and also giving too much information to make a point. This confuses the receiver and the message context may not be clear.

**Language Difference** - The difference of language between the sender and receiver can also a cause a major barrier in communication delivery. So they both should make sure that the language used for communication is understandable to both. Or else the entire process of communication ends up in being a failure.

**Prejudice** - The receiver might have some prejudices about the sender may be based on cast, culture, status, etc. In such cases the receiver can misunderstand the exact idea of the communicated message. For example, a supervisor feels that the subordinate is not a sincere worker. So the supervisor due to his prejudice towards the subordinate will misjudge every communication of this subordinate.

**Physical Barrier** - One of the major barriers to communication is the physical barrier. Physical barriers are present in the area surrounding the sender and receiver. Physical barriers include a work environment that has a lot of background noise, poor lighting or unstable temperature. These barriers can affect how individuals try to send and receive messages. If there is a lot of background noise than the receiver may not hear what the sender is saying. If the temperature in a work environment is too hot or too cold the sender may not be as focused on the message that they are trying to send. If people in the work place are separated by others, communication is not as effective. Proximity to others aids communication because it helps them get to know one another.

### 6.3.5: Active Listening

#### Explain



Listening is an underestimated skill, which is rarely taught and mostly neglected by all. Active listening means listening to understand the communication. Active listening is an art that comes by practice. It takes more effort than plain “hearing” but the benefits make it worthwhile. Listening goes beyond hearing.

Below are some tips to improve active listening:

Keys to effective listening	The bad listener	The good listener
Find areas of interest	Switches off during boring or dull subjects	Asks if there might be something of relevance to him
Judge content not delivery	If delivery is poor, switches off	Considers content, skips over errors of delivery
Hold your fire	Jumps in before hearing the full argument	Waits until he understands fully before exercising his opinion
Listen for ideas	Listens for facts	looks for a theme or thread in what is being said
Be flexible	Takes copious notes using only one system	Takes fewer notes. Uses several systems according to the speaker
Work at listening	Makes no real effort to listen – fakes his attention	Works hard to concentrate
Resist distractions	Is easily distracted	Fights or avoids distractions, tolerates bad habits, knows how to concentrate
Exercise your mind	Avoids difficult material, looks for light relief	Seeks complex material to exercise his mind
Keep your mind open	Reacts to emotional words	Hold his emotions in check

### 6.3.6: Writing skills

#### Explain



For getting success in any industrial organisation writing skill is also very important. Some of the key instruction for good writing skill are -

**Clarity in Content** - Your writing must be understood at the first reading. A business document is clear when it means exactly what the writer intends. Avoid technical jargon, unfamiliar words or formal language. Eliminate ambiguity, i.e. avoid using a word with a double meaning or misplacing a phrase within a sentence.

**Remain Brief** - Avoid unnecessary repetition. Include only relevant information. Come to the point quickly and without “waffle”. Omit unnecessary background information. Use short, familiar words instead of long words. Revise your first draft, looking for ways to reduce the number of words or to cut out unnecessary information.

**Be Complete** - Check that all the information the reader will need is included: Who? What? Where? When? Why? How?

**Accuracy in spelling and facts** - Check your work for accuracy of punctuation, grammar and spelling (especially the names of people and places). Check for accuracy of information: e.g. times, dates, figures and telephone numbers. Check for consistency of layout.

**Be Convincing -**

- Use language that is believable.
- Avoid exaggeration and superlatives.
- Suggest possibilities or probabilities rather than making forceful assertions.
- Provide supporting arguments for your point of view – e.g. provide examples, statistics or a quote from a respected authority.

**Show Courtesy in Words -**

- Display good manners and a caring attitude in your writing.
- Whenever possible, phrase your writing positively with a pleasant tone.
- Passive voice should be used when communicating bad news. This avoids negative overtones and personal criticism. Use language that is rational and unemotional.

## 6.3.7: How to resolve conflict

### Explain



When people work together, conflict is often unavoidable because of differences in work goals and personal styles. Follow below guidelines for handling conflict in the workplace.

**Talk with other Person -**

- Ask the other person to name a time when it would be convenient to meet.
- Arrange to meet in a place where you won't be interrupted.

**Focus on Behavior and Event not on Personalities -**

- Say “When this happens ...” instead of “When you do ...”
- Describe a specific instance or event instead of generalizing.

**Listen Carefully -**

- Listen to what the other person is saying instead of getting ready to react.
- Avoid interrupting the other person.
- After the other person finishes speaking, rephrase what was said to make sure you understand it.
- Ask questions to clarify your understanding.

**Identify Points of agreement and disagreement -**

- Summarize the areas of agreement and disagreement.
- Ask the other person if he or she agrees with your assessment.
- Modify your assessment until both of you agree on the areas of conflict.
- Ask questions to clarify your understanding.

**Prioritize areas of Conflict -**

- Discuss which areas of conflict are most important to each of you to resolve.

**Develop a plan to work upon each conflict -**

- Start with the most important conflict.
- Focus on the future.
- Set up future meeting times to continue your discussions.

**Follow through on your plan -**

- Stick with the discussions until you've worked through each area of conflict.
- Maintain a collaborative, "let's-work-out-a-solution" attitude.

**Build on your success -**

- Look for opportunities to point out progress.
- Compliment the other person's insights and achievements.

**Demonstrate** 

- Demonstrate skills of good communication.
- Demonstrate barriers of communication.
- Demonstrate skills of good writing.
- Demonstrate how to resolve conflict between fellow workers.

**Role play -1** 

**Objective:** Communication skill role play demonstration.

**Procedure:**

- Demonstrate the participants various traits of correct communication.
- Ask the participants to make a pair of 2 participants.
- Provide them a scenario for communicating with each other.
- Ask them to demonstrate the use of various communication skill taught in the class, such as: listening other person without interruption, maintaining a positive body language, keeping an positive eye contact while communicating, etc.

**Activity Outcome:**

- You will be able to test the skill of participants for communication.
- Participants will get opportunity to practice the communication skill learned in the class.

Activity	Time	Resources
Interpretation and use of work instructions for operating internal mixer machine	8 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos related to communication skill, various communication scenario

Table 6.3.1

## UNIT 6.4: Work Management

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Decide priority of work required to be done.
2. Describe how to select work to do from pending work.

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flipcharts
- Participant Handbook / Copies of Handout

### Do

- Greet the participants for the day.
- Give summary of previous session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

## 6.4.1: Plan and Manage Work

### Ask

- Ask students what is the importance of planning?
- Ask students, why it is important to do work management?

### Explain

In any working day we have to do lot of activity. It is important to complete all activity, but there are some which are absolute necessary to complete on time. This is only possible when we do work based on priority. Here we will learn how to prioritize our work.

First we have to divide our work in 4 categories –

1. Important and necessary
2. Not important but necessary
3. Important but not necessary
4. Not important and not necessary

Once we have divided the all work available, we need to following –

1. Discard all activities, which are in category 4 'Not important and not necessary'.
2. Review first category work, which is 'Important and necessary'. Do big duration work, out of this category initially and small duration later on.
3. Then do work from category 2, which is 'Not important but necessary'. Such as – arranging tyre for moulding, arranging equipment for next operation etc.
4. At last, do work from category 3, 'Important but not necessary'. Such as – Informing Supervisor for work progress.

Above way of prioritizing will help in completing all work in time.

## Demonstrate



- Demonstrate how to manage tyre moulding activity.
- Demonstrate how to prioritize activities related to tyre moulding.
- Demonstrate implications of not planning your activities.

## Activity-1



**Objective:** Work prioritization activity demonstration.

**Procedure:**

- Demonstrate the participants how to prioritize the work from the pending tasks.
- Provide them a list of various tasks.
- Ask them to demonstrate the prioritization of tasks, such as: machine cleaning, production reporting to supervisor, machine preventive maintenance, etc.

**Activity Outcome:**

- Participant will be able to learn prioritization of activities through practical application of rules taught in the class.
- Participants will get opportunity to understand real work pressure during job.

Activity	Time	Resources
Work prioritization activity demonstration	6 Hours	White board & markers, facilitator notes, laptop/ slides + projector.

Table 6.4.1

## Answers

1. d    2. c    3. c    4. d    5. d    6. b    7. c    8. d    9. c    10. a





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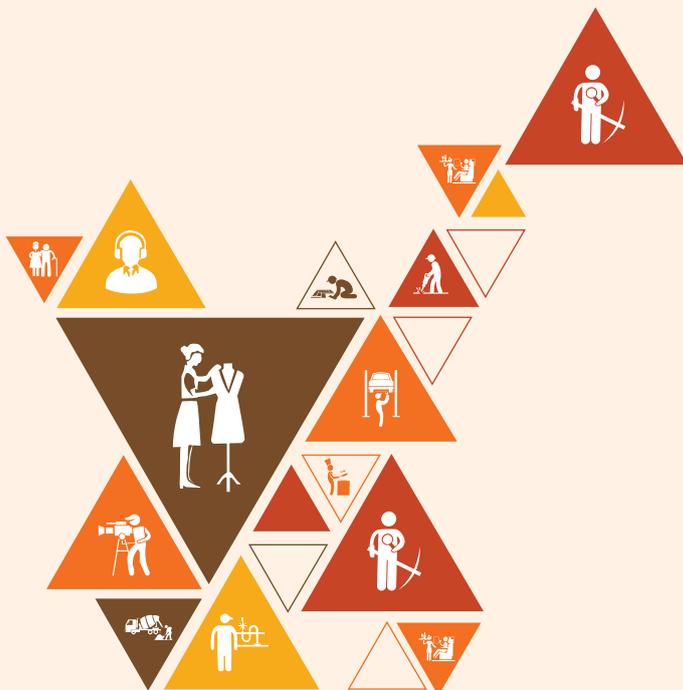
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# 7. Carrying Out Quality Checks

Unit 7.1 – Defects in Retreaded Tyres



RSC/Q5003

## Key Learning Outcomes

**At the end of this module, participant will be able to:**

1. Define need of quality control in tyre retreading.
2. Identify and discuss various defects generated during tyre retreading.
3. Discuss methodology of problem solving.
4. Describe implication of tyre retreading defects.

## UNIT 7.1: Defects in Retreaded Tyres

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Perform visual inspection retreaded tyre.
2. Define various quality defects in retreaded tyre.

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flip charts
- Participant handbook / Copies of handout
- Retreaded tyres with defects

### Do

- Greet the participants for the day.
- Give summary of previous Session.
- Ask for any doubts in previous Session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

## 7.1.1: Quality defect in tyre

### Explain

Same as in other manufacturing process, tyre retreading is also depends on various machine / man performance. Any variation in parameter or setting can generate a defect.

Tyre retreading process has evolved very much and machines and process are very robust, still some defects generate.

Since tyre is a safety product and any field failure can cause customer life, hence it is very important that all the defects are minimized and contained in factory. There should not be a single defective part go to customer.

All tyre retreaded companies follow good quality control system to ensure defect free part to customer. All tyres are checked after retreading process and in the end they are checked for dimensional, fitment and performance.

## 7.1.2: Casing Failure

### Explain



Casing failures occur due to the carcass or body of the tyre failing. This could be due to a belt separation, zipper (sidewall lateral rupture), sidewall separation or such which was not found during initial inspection. It has nothing to do with any part of the process (except failure to diagnose at initial inspection), driver fault, or rubber. Many casing failures can be avoided by using Real Time XRay relatively new technology or Shearography to locate separations etc.

### Explain



#### Process Failure

Any retread that fails on the road due to a problem caused during the retreading process. Ordinarily, any process problem will happen within 200 or so miles on the road, anything after this is usually due to other reasons. These process problems could be due to a number of factors such as contamination under the tread, bad skive out repairs, bad repairs or section repairs, curing failures (due to chamber problems) or any other step in the process that does not comply to the recommended quality steps. These are not normal, but do happen if quality is not adhered to.

#### Repair material problems

If repair material is not of a good quality, the quality of retreaded tyre would be poor only. Contaminants can enter patches etc in the construction process, cements can be faulty, extruder rope used for filling can be out of date etc.

#### Cushion gum/ strip - stock problems

This is very rare, but when cushion gum or strip-stock has exceeded its shelf life and is either partly or fully cured, the tyre will fail. This could be due to the manufacturer of the gum or stock shipping faulty goods, or the retread factory not storing in a cold room or using material after their expiry dates. Mainly; it is due to not storing at a low temperature, or not allowing the cushion gum removed from the cool room to reach ambient temperature. The temperature normalization is important as it removes the sweating, just as a can of soda taken from a refrigerator will create condensation on the can when placed in warmer air. Rubber removed from the cool room have the same phenomena.

#### Faulty tread rubber

Tread rubber suppliers can have a number of problems with the tread they supply. Pattern sharpness deficiency (due to lack of rubber in the press, air pockets etc) which will not cause a failure, and is usually only a cosmetic issue. Failures can however occur due to:

- Porosity in the tread rubber due to lack of cure,
- lack of pressure etc.

When cut, the rubber shows many little air pockets or honeycombs. If the underside of the tread is contaminated with excess mould release lubricant.

If the underside of the tread has not been buffed (rubber will not bond to rubber that has not been prepared).

If the buffed surface has not been cemented to prevent oxidation.

### 7.1.3: Assuring quality in tyre retreading process

#### Explain

Although every effort is made to produce quality retreads, defects or blemishes will arise which may be suitably repaired and then passed to finished stores as first quality stock.

Minor repairs may be effected anywhere on the retread, although the defective area occurs mostly on the sidewalls. These minor defects are often no more than surface blemishes in the form of lightness or blisters which can be repaired without being readily apparent or unduly detracting from the appearance. If the blemish is consistent, check that it is not caused through lack of venting in the mould or contaminated mould/side plate surfaces.

Service and safety are the prime consideration and any repaired retread must fully meet these requirements. If in doubt, the retread should be rejected or a more experienced person consulted.

Much depends on the particular company and their standards as to exactly the company policy, which is adopted. It follows that the higher the standard, the greater degree of quality control required to maintain the standard. However, it must be emphasized that it is more satisfactory and far less troublesome to handle a consistently good quality product. Skilled operators are required for any repairing operation, but even they cannot produce a top quality retread from a mediocre product.

According to the nature of the repair, it may be effected with or without applied pressure. Most blemishes are removed simply by buffing with a carborundum stone and then polishing with a revolving rag wheel or similar. Special purpose proprietary machinery, materials, tools and instructions are readily available.

Whilst most after-cure repairs are dealt with in the inspection department, some which require more detailed attention are returned to the main repair section.

Retreads which, after repair, have an inferior and unacceptable appearance but fulfil all other service requirements are sometimes disposed of as a special clearance lot. Further, the retread manufacturer remains responsible for the product during the service life.

For assuring quality of a retreaded tyre their three main important factors:

1. Quality control of the input material
2. Quality of consumables
3. Retreading process control

#### Explain

##### **Quality control of the input material used in tyre retreading**

It is always essential to control the quality of input material used for tyre retreading. Material used in retreading such as:

1. Cement
2. Extruder rope
3. Cushion gum/strip stock

In order to ensure the input material quality, it always recommended to buy these from the approve source. Any deviation in input material should be properly authorized by competent authority of the organization.

## Explain



### Quality of the equipment, tools & consumables used in tyre retreading

Equipment, tools & consumables used in tyre retreading also plays an important role in producing quality product. If the equipment or tool is not of good quality then retreaded tyre may have quality problem. For example, if buffing machine is not working properly or the buffing wheel used are not of good quality then the surface preparation will be poor. Surface preparation plays a very important role in adhesion with new tread. Due to poor adhesion the tread may come off during use.

### Retreading process control

Even if we use good quality input material and best equipment and tools, still one needs to adhere the process parameter. An important factor in assuring quality of a retreaded tyre is control on retreading process.

Always follow organization's work instruction for carrying out all processes. Following are some instruction which should be adhered for better process control:

1. Carry out inspection as per check points given in company's work instruction or advised by supervisor.
2. Never use casing which is rejected in initial inspection.
3. For any deviation ask permission from authorized person.
4. Ensure identification during inspection process.
5. Do not mix rejected casing after inspection with ok casing.
6. Always operate buffing machine at advised RPM.
7. Always replace buffing wheel at appropriate frequency.
8. Normalize the cushion gum at room temperature before use.
9. Ensure tyre identification with job sheet before proceeding to tyre building. It will ensure correct tread on retreaded tyre.
10. Keep oven temperature as advised in work instruction.
11. Do not skip final inspection before moving the retread tyre to store.

## 7.1.4: Quality Defect Analysis and Countermeasures

### Explain



In principle, all the quality problems are generate due to some issues in manufacturing process or design fault. If we can analyze the problem and can understand the problem root cause, then we can eliminate the problem by taking appropriate actions on the problem. The most used tools for root cause analysis are -

1. Fish-bone Diagram
2. Why-why analysis

## Explain

### Fish - bone Diagram

As the name suggests, it appears to be a fish-bone, that is why it is called fish-bone diagram. In this process, one team is made of the key persons from related departments. For example - for any manufacturing defect related issue, the team will have persons from Production, Quality, Process Engineering and design dept.

The team will first analyze the problem and then think that what could be the possible reasons which could have created the problem. The key to this process is, that nobody questions the other team member during this reason identification process. Once all the possible reasons are written then next step is to review all reasons and their actual contribution to problem.

After deep analysis, only most relevant reasons are left. Now action are taken on these reasons, which normally resolve the problem. If problem is still not resolved, then this process can be repeated again.

### Why - why Analysis

In this method of problem solving, Why's are asked for reason for any problem. These why's are asked till we reach last level of any process. Normally in 5 why's we reach to the actual reason. This is very good for in-depth analysis. For Example - Defect of 'Uneven Tyre surface' can be analyzed as below -

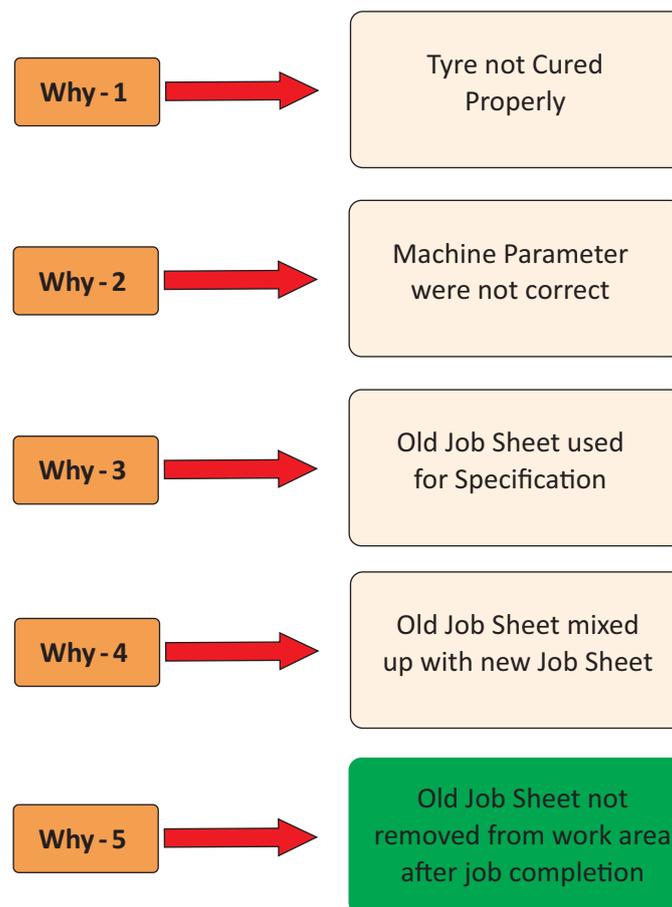


Fig. 7.2.4 Why-why analysis

## Demonstrate

- Demonstrate different types of retreaded tyre defect.
- Demonstrate implications of retreaded tyre defects on tyre performance.

## Activity-1

**Objective:** Practice of defect identification of retreaded tyres.

**Procedure:**

- Demonstrate the participants the process of defect identification of retreaded tyres.
- Provide them pre-inspected and pre-identified retreaded tyres for defect identification
- Ask them to demonstrate the inspection of retreaded tyres.
- The facilitator should guide them during the process.

**Activity Outcome:**

- The participants will learn to carry out inspection of retreaded tyres.
- Participants will build confidence by doing hands on experience.

Activity	Time	Resources
Practice of defect identification of retreaded tyres.	8 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos of retreaded tyre inspection, pre-inspected and pre-identified retreaded tyres, PPEs.

Table 7.1.1

## Team Activity-2

**Objective:** Demonstration of problem solving skill: why-why analysis.

**Procedure:**

- Demonstrate the participants how to create a why-why analysis for any problem.
- Ask the participants to make a pair of 2 participants.
- Provide them an problem for which they have some deep knowledge.
- Ask them to create a why-why analysis for the given problem.

**Activity Outcome:**

- You will be able to test the skill of participants for why-why analysis.
- Participants will get opportunity to create a why-why analysis for a real scenario.

Activity	Time	Resources
Demonstration of problem solving skill: why-why analysis	4 Hours	White board & markers, facilitator notes, laptop/ slides + projector, flip charts

Table 7.1.2

### Team Activity-3

**Objective:** Demonstration of problem solving skill: fish bone diagram.

**Procedure:**

- Demonstrate the participants how to create a fish bone diagram for any problem.
- Ask the participants to make a pair of 2 participants.
- Provide them an problem for which they have some deep knowledge.
- Ask them to create a fish bone diagram for the given problem.

**Activity Outcome:**

- You will be able to test the skill of participants for fish bone diagram.
- Participants will get opportunity to create a fish bone diagram for a real scenario.

Activity	Time	Resources
Demonstration of problem solving skill: fish bone diagram	4 Hours	White board & markers, facilitator notes, laptop/ slides + projector, flip charts

Table 7.1.3





## Key Learning Outcomes

**At the end of this module, participant will be able to:**

1. Explain what is problem.
2. Describe how to identify problem.
3. Define hierarchies.
4. Discuss hierarchy in tyre industry.
5. Explain how to escalate problem.
6. Describe need for escalation.

## UNIT 8.1: Problem Identification and Escalating to Supervisor

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Explain what is problem.
2. Describe how to identify problem.
3. Define Hierarchies.
4. Discuss Hierarchy in tyre industry.
5. Explain how to escalate problem.
6. Describe need for escalation.

### Resources to be used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flipcharts
- Participant Handbook / Copies of Handout

### Do

- Greet the participants for the day.
- Give summary of previous session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course

### 8.1.1: What is problem?

#### Ask

- Ask students what situations are called problem?
- Ask students what are the implications if problem not solved?

#### Say

Any abnormal situation is called problem. Any work condition, which is not as per standard work procedure, can be defined as 'Problem'.

## 8.1.2: Problem identification

### Explain



For identifying problem, the person should be fully aware of normal situation or work condition. The operator should be vigilant for observing sign of any problem during process. He / She should use following process and activities while looking for problem –

- 1- The machine is working fine as per specification.
- 2- All the parameters for machine are available and giving good result during production.
- 3- Raw material is available for process.
- 4- No abnormality observed in Raw material used for process.
- 5- Parts produced are ok as per specification.
- 6- Space is available for keeping produced parts.
- 7- There is no fire hazard observed during work.

## 8.1.3: Hierarchy

### Explain



Hierarchy is a reporting structure. It is a framework designed to divide, organize, and coordinate the different activities of an organisation. We can consider reporting structure as a group of people, which have been asked to coordinate with each other through some ground rules to accomplish organisational goals and objectives as shown in following figure:

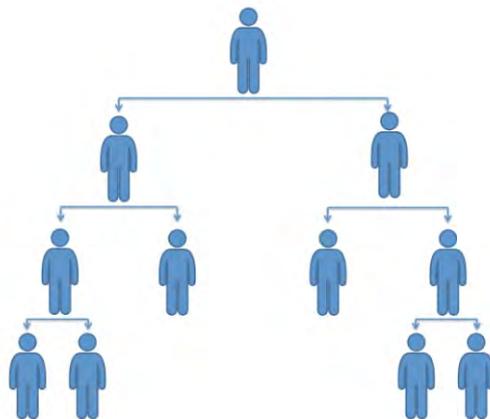


Fig. 8.1.3. Hierarchy

## 8.1.4: Hierarchy in tyre retreading industry

### Explain

Every organisation has hierarchy matrix, which decides reporting structure. It helps in smooth flow of information and maintains order in organisation. Without hierarchy, it is very difficult to manage organisation. Example of a typical tyre manufacturing organisation hierarchy is below –

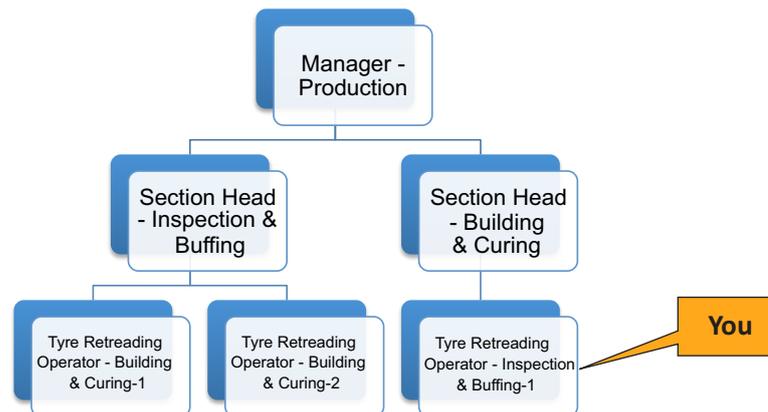


Fig. 8.1.4. Tyre retreading organisation hierarchy

## 8.1.5: Escalation of problem

### Explain

All the problems should be dealt as per procedure defined. If you think you cannot deal with problem appropriately or there is no procedure defined for dealing with the problem then it should immediately be escalated to your Supervisor for further action. It should be ensured that all such problem should be escalated without any delay. Any delay in escalation may worsen the problem. The escalation can be in any form –

1. Formal – written
2. Informal – Verbal / Telephonic

## 8.1.6: Why escalation?

### Explain

Although all employees should do their job as per procedure and work instruction for their particular job role and avoid any conflict or deviation from the procedure, but due to complexity of work there are various matter in organisation, which an employee need to bring in notice of his/ her superior. Due to position and experience superior is in better position of taking decision. If he is not able to take decision then he / she will take this issue to next level up and based on the issue, decision shall be taken at appropriate level.

In this way any abnormal situation should be brought to the person you are reporting to. Some of the situations related to tyre industries are –

1. Tyre moulding machine not behaving well.
2. Tyres produced are with blemishes such as Blister Slights / Blows and their quality is suspected.
3. Internal customer (dispatch section) has reported some problem in latest lot produced.
4. Air and steam pressure is lower than specification.
5. There is a customer complaint reported in a lot shipped 2 months back.
6. Curing machine is under breakdown from last 4 hours, shipment to customer is very critical.

All these situations should be brought in to the notice of your superior. It should be remembered that the escalation should be done as per hierarchy of organisation. But in case immediate supervisor is not available and situation is very critical then you should go to next level.

### Activity-1

- Conduct presentation on 'five common problems of retreading industry activity'.
- Ask the students to make group of 5 students.
- Students have to make and give presentation on 'five common problems of retreading industry activity'.
- One group of Students will have 30 minutes to create presentation on 'Five common problems of retreading industry'. 30 minutes for giving presentation.
- Appreciate efforts made by students and clarify doubts, if any raised, during activity.

Activity	Time	Resources
Presentation on five common problems of retreading industry	4 Hours	Tyre retreading work place, flip charts, marker

Table 8.1.1

### Answers

1. b    2. c    3. b    4. d    5. b    6. a    7.a    8. c    9. d    10. a







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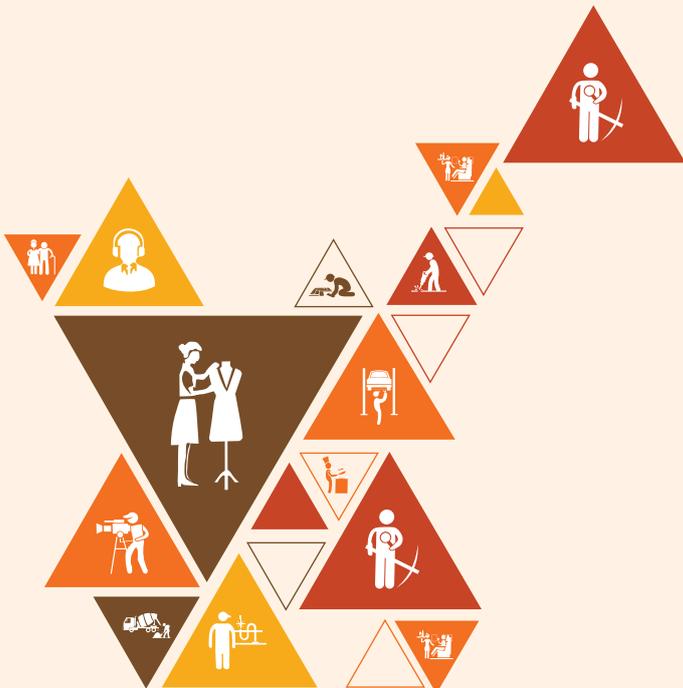
## 9. Health & Safety

Unit 9.1 – Hazards in Tyre Retreading Industry

Unit 9.2 – Health & Safety Requirement at Work

Unit 9.3 – Tyre Retreading Safety Equipment

Unit 9.4 – Handling Fire Hazard and other Emergencies



RSC/N5007

## Key Learning Outcomes

### **At the end of this module, participant will be able to:**

1. Describe the hazards
2. Identify hazard in tyre industry
3. Describe chemical hazard
4. Describe physical hazard
5. Describe ergonomic hazard
6. Explain the health and safety requirements for tyre industry
7. Discuss health and safety procedure of organisation
8. Explain what is PPEs
9. Discuss requirement of PPE
10. Identify different types of PPEs used in rubber and tyre industry
11. Describe the purpose of various PPEs used in rubber and tyre industry
12. Demonstrate the use of different PPEs.
13. Define what is emergency
14. Describe various emergency situations in industry
15. Describe common injuries in industry
16. Describe First aid box and its constituents
17. Demonstrate how to handle Fire emergencies
18. Demonstrate how to use a multi purpose fire extinguisher
19. Describe type and class of fires
20. Describe suitable fire extinguisher as per fire type and class

## UNIT 9.1: Hazards in Tyre Retreading Industry

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Explain what is hazard.
2. Identify hazard in tyre retreading industry.
3. Describe chemical hazard.
4. Describe physical hazard.
5. Describe ergonomic hazard.

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flipcharts
- Participant Handbook / Copies of Handout

### Do

- Greet the participants for the day.
- Give Summary of previous session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

### 9.1.1: What is Hazard?

#### Explain

'Hazard' is set of conditions, which can be risk to health or life. It can be atmosphere of work place or construction of machine or working procedure. Anything out of these or alone can be a Hazard. For understanding it better we can see Examples of various hazards and threat possessed by them. Oil on floor creates Slip hazard. Use of Asbestos creates Cancer and other breathing problem hazard. Use of broken electric wires creates electrocution hazard and fire hazard by potential sparking out of it.



Fig. 9.1.1. Hazard

## 9.1.2: Hazards in tyre retreading industry

### Ask



- Ask students their understanding of hazards in tyre retreading industry?
- Ask students the implications of different hazards in tyre retreading industry?

### Elaborate



Apart from some common hazards of manufacturing industries, tyre retreading industry has some exclusive hazard, which are associated with use of rubber, chemical and heat.

Explain tyre Industry hazard in detail –

1. Manual handling – Around 40% of total accident in tyre or rubber industry is reported due this cause.
2. Accident by moving or falling object – this is the other big hazard in tyre industry. Tyre is a big and heavy part and it is difficult to manage its weight manually. During transportation if tyres are not secured properly then there is chance that tyre may fall from open moving vehicle or can fall on person who open the door of closed transportation vehicle. Special safety arrangement should be made to load tyres in side vehicles.
3. Slips and falling – This is also a bigger reason for many accidents. Floor of shop should be free from any oil or slippery material. Also aisles should be clutter free so that movement of persons and trolleys remains smooth.
4. Rubber and Dust Fumes – Due to exposure to beta-naphthylamine, workers are prone to get cancer. Prolonged exposure to this chemical leads to bladder cancer. The employer should use a effective way of ventilation and prolonged exposure should be avoided.



Fig. 9.1.2. Hazard of manual handling



Fig. 9.1.4. Slip or fall



Fig. 9.1.3. Accident by moving / falling object

Other hazards can be classified in to 3 categories –

1. Chemical hazard.
2. Physical hazard.
3. Ergonomic hazard.

## Explain

### Chemical hazards

There are many chemicals that are used in tyre industry. Prolonged exposure to these chemicals without using effective PPEs can affect human body adversely. There are 3 ways of affecting by chemicals.

**A- Inhalation:** If any chemical is in vapour of gaseous form, then a worker can inhale it while working near to that chemical.

**B- Ingestion:** It is possible by accidentally swallowing the chemical through eating or drinking

**C- Absorption:** There are some chemicals those get absorbed in body through contact with skin or eyes.

### Physical hazards

Physical hazards are types of energy that may be hazardous to workers. Following are example of physical hazards –

**Noise:** When you are exposed to excessive noise levels, the first stage is temporary hearing loss. Several factors influence the noise levels to which workers are exposed:

- Type of equipment being operated condition/maintenance of the equipment
- Other equipment running at the same time
- Enclosed or partially enclosed spaces

**Vibration:** Whole-body vibration can occur from operating large mobile equipment, such as drillers, air hammers, pile drivers, tractors, graders, excavators, earth-moving equipment, and other large machinery. Hand-arm vibration can result from using hand-held power tools, such as pneumatic drills and hammers, and disc grinders.

**Temperature extremes:** A change in body temperature due to extreme work environmental conditions can lead to stress or illness from heat or cold. If not treated in time, both heat and cold stress/illness can develop into life-threatening situations. Heat illnesses causes: Heavy work in high temperatures can cause muscle cramps, dehydration, sudden collapse, and unconsciousness.

- a- Heat rash
- b- Fainting
- c- Heat cramps
- d- Heat exhaustion
- e- Heat stroke
- f- Wearing resistant protective clothing when doing heavy work.

**Cold illnesses and injuries:** Cold temperatures can lead to fatigue, irregular breathing, confusion, and loss of consciousness (hypothermia).

- a- Frostnip
- b- Immersion injury (trench foot)
- c- Frostbite
- d- Hypothermia

## Explain

### Ergonomic hazards

Ergonomic hazards can cause painful and disabling injuries to joints and muscles. These can occur from:

- Heavy, frequent, or awkward lifting, repetitive tasks, awkward grips, postures, using excessive force, Over-exertion, using wrong tools for the job or using tools improperly, using improperly maintained tools, hand-intensive work,

Explain correct lifting position -

- Chin tucked in, comfortably straight back, leaning slightly forward, arms close to body, secure grip, Bent knees, proper foot position:

## 9.1.3: General hazards in tyre retreading industry

### Explain

**Slip and fall** - Slip and Fall are the most common reasons for accidents in any manufacturing organisation. This usually occurs due to spillage of water, oil or chemical on the shop floor. It is important that any kind of spillage should immediately be cleaned. Another reason of fall is getting tripped over an obstruction while walking in an aisle. Hence, all the aisles should be clear of any obstruction.

**Heavy Weight Lifting** - Lifting weight is very common activity in any manufacturing organisation. While lifting the weight it is very important that we assess the weight before lifting it. Lifting heavy weight may cause a serious injury to the person lifting it. Another major reason for injury is lifting the weight in a wrong posture. Generally, people lift weight by bending the back. This puts all the load on the back, which may cause serious back injury. While lifting any weight, we should assess the weight by moving it a little, and lift it only when we are very sure that we can lift it safely. Also, we should not bend our back for lifting any weight, rather we should bend our legs and stand up with the weight. This method ensures the distribution of the load on the legs and minimizes the chance of back injury.

**Injury by defective tool** - Poorly maintained tools and equipment are another source of accidents. If any equipment needs repair, it should immediately be informed to the maintenance department. Using defective equipment, such as a cutter, knife, or any machine, may seriously injure the person using it.

**Injury by dangerous chemicals** - It is very common to use chemicals in any organisation. Some of the chemicals are very dangerous for the human body. Utmost precaution should be taken while handling these chemicals. To understand the criticality of the chemical, we can use a document called MSDS (Material safety data sheet). MSDS has all the details related to the chemical, such as: is it dangerous or not, how to deal with the situation if exposed, first aid to be given in case of any exposure, storage and handling instructions, etc.

**Injury by Fire / Explosion** - Most of the companies use materials which can cause fire and explosion, if not used properly. It is important that explosive and flammable material are handled with utmost care and as per handling and storage instructions given in its MSDS.

**Injury due to lack of training** - Employees who assist operators in an organisation, generally have a high turnover rate. Their role in an organisation is very important, hence they are needed to be replaced immediately, if left. In this situation, the Human Resource department gets a new person. Since this is an entry-level job, hence they generally don't have any previous experience of working in any organisation. Since there is not enough time available for their training, hence they are deployed on machines with just some general instructions. This may cause serious accidents. Organisation must give proper training to all employees, before deploying them on any job.

## 9.1.4: Hazards while manufacturing rubber

### Explain

- Dust arises in rubber making where ingredients are handled, weighed, added to or mixed with uncured natural rubber or synthetic elastomers.
- Rubber process dust can cause cancer and dermatitis.
- Keep inhalation of rubber process dust as low as possible below the workplace exposure limit of 6 mg/m<sup>3</sup> (8-hour time-weighted average) or as mentioned in the SOP.
- Rubber process dust does not include dust from cured rubber, e.g. from buffing or trimming.
- Fire and explosion hazards
- Many of the rubber compounding additives are fire sensitive, particularly:
  - Sulphur and organic peroxides (used as curing agents);
  - Azodicarbonamide (used as a blowing agent in some open celled rubber/lattices). Particular care is required in storage areas to make sure incompatible materials, such as carbon black and sulphur, are adequately segregated. There have been incidences of dust explosions in powder handling areas. Many rubber compounding additives such as azodicarbonamide, calcium and zinc stearates, are known to be highly explosive when in a finely divided state. Design dust extraction and collection systems for use with potentially explosive dusts. Good housekeeping will minimize the risk of secondary dust explosions.

## 9.1.5: Hazards and Safety precaution while doing tyre retreading

### Explain

Cleanliness of the machines and work areas is important for the safety of the curing process as well as operating personal.

Retreading operator should wear safety shoes, safety glasses, caps and gloves.

Relevant regulatory environmental help and safety instruction must be displayed in the work place. Schedule for cleaning of machines and the shop floor along with the names of person responsible must be prepared and displayed. Display board mentioning protective equipment to be used “when and how” should be fixed at the noticeable place in the department or section. Board mentioning details of potential hazard and their preventive action should be displayed.



Fig. 9.1.7. Retreaded tyre curing

## Demonstrate



- Demonstrate different safety and health hazards during tyre retreading .
- Demonstrate implications of safety and health hazards on tyre retreading operator.

## UNIT 9.2: Health & Safety Requirement for Tyre Retreading Industry

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Explain the health and safety requirements for tyre industry.
2. Discuss health and safety procedure of organisation.

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flipcharts
- Participant Handbook / Copies of Handout

### Do

- Greet the participants for the day.
- Give Summary of previous Session.
- Ask for any doubts in previous Session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

## 9.2.1: Health & Safety requirement of tyre retreading industry

### Explain

Every industry has some health and safety hazards while carrying out its operations. Organisations cannot avoid these hazards, but can eliminate the risk of accident or their affect on human health by taking some precautions. Different organisations have different type of hazard, which are associated with the nature of process they carry out. Some of them are below –

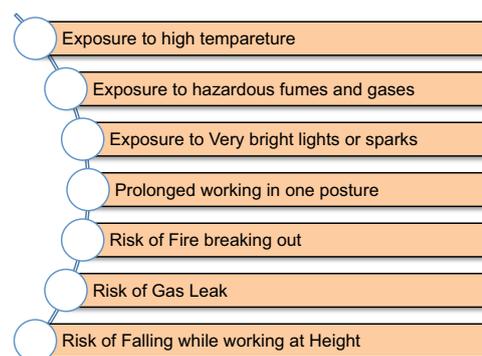


Fig. 9.2.1. Health and safety requirement of industry

## 9.2.2: Health and safety hazards of tyre retreading industry

### Explain



Due to excessive use of various chemicals and very high temperature processing of tyre, Tyre industry has its own very high health and safety hazards.

Although natural rubber used in tyre manufacturing poses very less affect on human health but other ingredients, such as Carbon black and some of special chemicals used in tyre making, poses great health hazard if exposed without PPEs for prolonged duration –

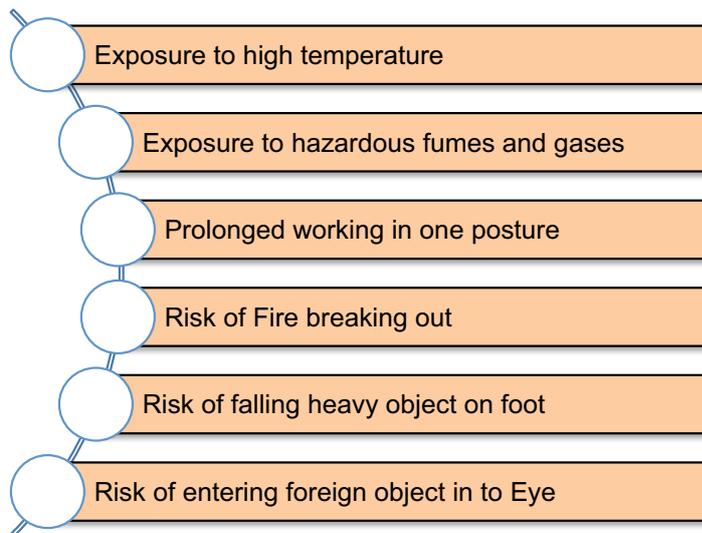


Fig. 9.2.2. Health and safety requirement of tyre industry

## 8.2.3: Health and safety hazards of tyre retreading industry

### Explain



To mitigate the risk of health and safety related issue every organisation prepares a procedure containing details of health and safety issues and actions to be taken. All the tyre-manufacturing organisations also follow this and have their own health & safety procedures.

As we know ingredient for tyre is rubber and other chemical, which are substantially hazardous for human if exposed for longer duration without proper personal protective equipment. Main purpose of this document is to reduce risk of employees of organisation while working.

This document has guidelines on 'how-to' of all health and safety related issue. Apart from minute details it has –

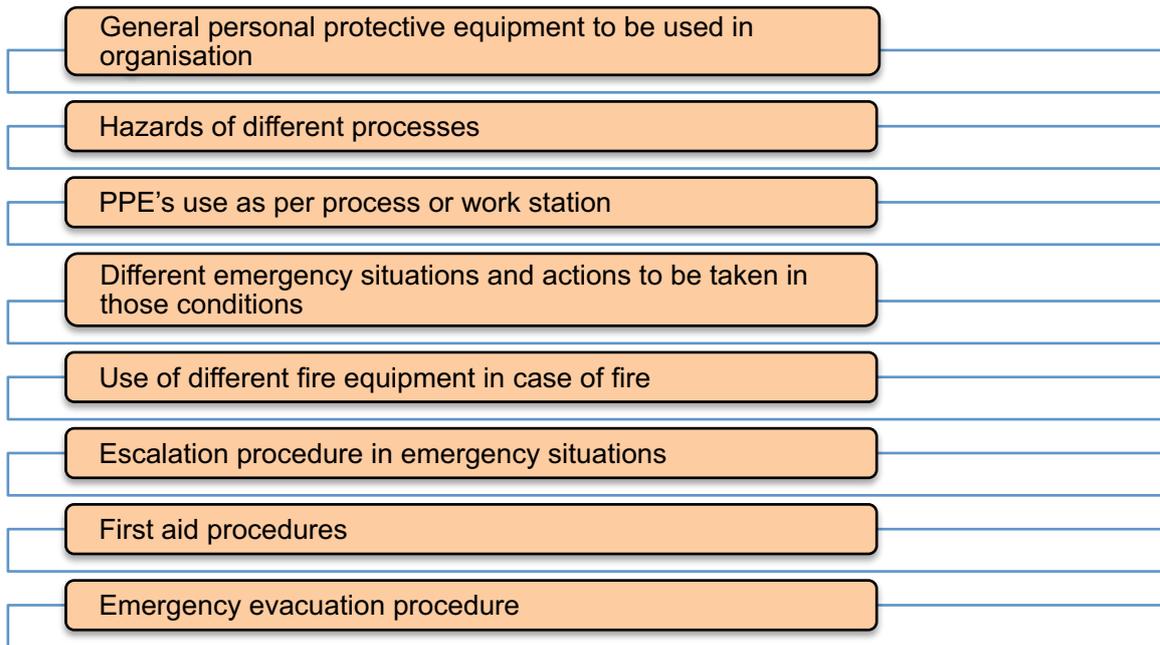


Fig. 9.2.3. Details of organisation's safety procedure

## Demonstrate

- Demonstrate how to use safety procedure during tyre moulding.
- Demonstrate implications of not following safety procedure.

## Activity-1

**Objective:** Creating safety risks identification skill

**Procedure:**

- Demonstrate the participants the process of safety risk identification at a workplace.
- Provide them workplace scenario for safety risk identification.
- Ask the participants to make a pair of 2 participants
- Participants will have to demonstrate safety risks identification skill by identifying the evident safety hazards in the given workplace scenario.
- The facilitator should guide them during the process.

**Activity Outcome:**

- The participants will learn safety risks identification skill.
- Participants will build confidence by doing hands on experience.

Activity	Time	Resources
Creating safety risks identification skill	6 Hours	White board & markers, facilitator notes, laptop/ slides + projector, videos of safety risk assessment of work areas, PPEs.

Table 9.2.1

## UNIT 9.3: Safety Equipment

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Explain what is PPEs.
2. Discuss requirement of PPE.
3. Identify different types of PPEs used in rubber and tyre retreading industry.
4. Describe the purpose of various PPEs used in rubber and tyre retreading industry.
5. Demonstrate the use of different PPEs.

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flipcharts
- Participant Handbook / Copies of Handout
- Sample of PPEs – Safety Goggle, Safety Shoes, Safety Gloves, Safety Hat, Mask, Earmuff

### Do

- Greet the participants for the day.
- Give summary of previous session.
- Ask for any doubts in previous Session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

## 9.3.1: What is PPE – Personal Protective Equipment?

### Ask

- Ask students what is PPE?
- Ask students what is the purpose of PPE?

### Explain

Personal protective equipment or PPE, as it is commonly called, is wearable equipment, which saves us from potential harm of various substance and situations. Such as – Mask, gloves etc.



Fig. 9.3.1. Type of personal protective equipment

## 9.3.2: Need of PPE

### Explain

To ensure the greatest possible protection for employees in the workplace, the cooperative efforts of both employers and employees will help in establishing and maintaining a safe and healthful work environment.

In general, employees should:

- Properly wear PPE,
- Attend training sessions on PPE,
- Care for, clean and maintain PPE, and
- Inform a supervisor of the need to repair or replace PPE.

There are many type of PPEs. PPEs used in rubber or Tyre industry are following –

### Explain

#### Respiratory Protection (RPE)

- RPE should not be needed if the controls work properly.
- RPE is usually needed for maintenance and cleaning.
- Provide RPE with an assigned protection factor (APF) of at least 10.
- Disposable RPE is acceptable - throw it away at the end of the task.
- Otherwise, replace RPE filters as recommended by the supplier.
- Make sure all RPE is properly fit-tested - get advice from your supplier.
- Keep RPE clean. Store it away from dust and other contaminants.

#### Eye and face protection

Employees can be exposed to a large number of hazards that pose danger to their eyes and face. Employers to ensure that employees have appropriate eye or face protection if they are exposed to front and/or side impact hazards from:

- Flying objects and particles;
- Molten metal;
- Liquid chemicals;

## Explain



- Acids or caustic liquids;
- Chemical gases or vapors;
- Potentially infected material;
- Glare;
- Injurious radiation;
- Electrical flash

### Head protection

A head injury can impair an employee for life or can be fatal. Protecting employees from potential head injuries by wearing a safety helmet or hard hat is one of the easiest ways to protect an employee's head from injury. Employers must ensure that their employees wear head protection if they are exposed to any of the following:

- Falling or flying objects;
- Other harmful contacts or exposures;
- Risk of injury from electrical shock;
- Chemicals;
- Temperature extremes;
- Hair entanglement

### Foot and leg protection

Employees, who face possible foot or leg injuries from falling or rolling objects or from crushing or penetrating materials, should wear protective footwear. Also, employees whose work involves exposure to hot substances, corrosive, or poisonous materials must have protective gear to cover exposed body parts, including legs and feet. If an employee's feet may be exposed to electrical hazards, non-conductive footwear should be worn. On the other hand, workplace exposure to static electricity may necessitate the use of conductive footwear.

Safety shoes have impact-resistant toes and heat-resistant soles that protect the feet against hot work surfaces common in roofing, paving and hot metal industries. The metal insoles of some safety shoes protect against puncture. Safety shoes may also be designed to be electrically conductive to prevent buildup of static electricity or nonconductive to protect workers from workplace electrical hazards.

### Hands and Arm protection

Where potential injury to hands and arms cannot be eliminated through engineering and work practice controls, employers must ensure that employees wear appropriate protection. Potential hazards include:

- Skin absorption of harmful substances (look for 'skin' warning on MSDS);
- Chemical or thermal burns;
- Electrical dangers; and
- Bruises, abrasions, cuts, puncture.

## Demonstrate



- Demonstrate different types of PPEs to be used during tyre retreading.
- Demonstrate implications of not using PPE on tyre retreading operator safety.

## Activity-1

**Objective:** Practice PPE (Personal Protective Equipment) use.

**Procedure:**

- Demonstrate the participants how to use different PPEs required during tyre inspection and buffing activities.
- Provide them different types of PPEs.
- Ask them to demonstrate the use of PPEs, such as: safety shoes, safety goggle, mask, safety hat, safety gloves, etc.
- The facilitator should guide them during the process.

**Activity Outcome:**

- Participant will be able to learn how to use different PPEs required during tyre inspection and buffing activities.
- Participants will build confidence by doing hands on experience.

Activity	Time	Resources
Practice PPE (Personal Protective Equipment) use.	6 Hours	White board & markers, facilitator notes, laptop/ slides + projector, safety videos, safety shoes, safety goggle, mask, safety hat, safety gloves.

Table 9.3.1

## UNIT 9.4: Handling fire and other emergencies

### Unit Objectives

**At the end of this unit, participant will be able to:**

1. Define what is emergency.
2. Describe various emergency situations in Industry.
3. Describe common injuries in industry.
4. Describe first aid box and its constituents.
5. Demonstrate how to handle fire emergencies.
6. Demonstrate how to use a multi purpose Fire Extinguisher.
7. Describe type and class of Fires.
8. Describe suitable fire extinguisher as per fire type and class.

### Resources to be Used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flipcharts
- Participant Handbook / Copies of Handout
- First Aid Box, Fire Extinguisher

### Do

- Greet the participants for the day.
- Give summary of previous session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course.

### 9.4.1: What is Emergency?

#### Ask

- Ask students what are the probable emergency situations in tyre industry?
- Ask students what are the implications of different emergency situations?

#### Say

Emergency is a sudden or unexpected state of situation, which, if not tackled properly, will lead to loss of property, health or life. In cases where any mitigation is not possible, immediate evacuation is needed.

## 9.4.2: Emergency situation in industry

### Explain



There are various emergency situations in industry. Some of them are –

1. Accident emergency
2. Electric shock emergency
3. Medical emergency
4. Natural Disaster Emergency – Flood, Earthquake, Tsunami, etc.
5. Fire emergency

For first 3 emergencies we need to give first aid and immediately call ambulance.

For natural disaster we should take shelter at safe place or follow company's emergency procedure.

For fire emergencies we will discuss in details. First we will understand about common Injuries in industries and their first aid.

- When heavy objects such as barrels or tools might roll onto or fall on the employee's feet;
- Working with sharp objects such as nails or spikes that could pierce the soles or uppers of ordinary shoes;
- Exposure to molten metal that might splash on feet or legs
- Working on or around hot, wet or slippery surfaces; and
- Working when electrical hazards are present.

## 9.4.3: Common injuries in industry and how to deal with them

### Explain



#### Abrasions and small cuts

Clean wound with soap and water. Apply antibiotic cream or Providone-iodine solution. Bandage and check dressing daily. See your doctor if there are signs of infection: increased redness, pus or red lines running from wound.



Fig. 9.4.1. Abrasions

#### Splinters

Remove with sharp, pointed tweezers. (They should be sharp enough to pick up a single hair.) If splinter is completely under the skin, expose splinter end with sewing needle doused in alcohol, and then remove with tweezers.



Fig. 9.4.2. Splinters

#### Lacerations

Clean wound with soap and water. Assess damage: If laceration is gaping or more than 1/4 in deep, seek emergency help. Otherwise, apply pressure to stop bleeding. Close wound with butterfly closures or adhesive strips. Check dressing daily.



Fig. 9.4.3. Lacerations

## Fractures

Signs include extreme pain, swelling, bruising and an inability to move an adjacent joint. If you have any of these signs, you should be seen by a doctor to see whether you need an X-ray to evaluate for a fracture.



Fig. 9.4.4. Fractures

## Amputations

Apply pressure to wounded area with clean bandage. Don't panic. Call for help. Raise wounded area above heart. Wrap amputated appendage in plastic bag. Keep appendage cool, not directly on ice. Sit in a chair near door, and await help.



Fig. 9.4.5. Amputation

## Eye injuries

Look in mirror to assess eye. If foreign matter is embedded in the eye, go to the emergency room. If foreign matter is on the surface, flush it with water, or use eye wash and cup. For chemical splashes, flush with running water for five to 10 minutes. If it hurts too much to open your eye, go to the emergency room.



Fig. 9.4.6. Eye injury

## Fumes and dust

If you feel dizzy or are having trouble breathing, leave the area, and go to fresh air. If normal breathing doesn't return in 15 minutes, go to the emergency room.



Fig. 9.4.7. Fumes and dust

## 9.4.4: Basic things in first aid box

### Ask



- Ask students what first aid?
- Ask students what is the importance of first aid?

### Explain



**Top shelf:** An asthma inhaler to counteract allergic reactions to fumes and to exotic-wood dust; sharp scissors for cutting bandages; adhesive tape for bandaging; an elastic bandage for securing dressings.

**Middle shelf:** Needles for splinter removal are stored in sterile alcohol; splinter tweezers, precise enough to pick up a single hair; 4-in. by 4-in. gauze pads for bandaging; assorted adhesive strips for small boo-boos; clean plastic bag for amputated parts; sterile rolled gauze for bandaging; butterfly bandages for drawing together larger lacerations.

**Bottom shelf:** Providone-iodine solution for killing germs; eyewash and cup; small mirror for eye inspections; instant ice packs to reduce swelling or for transporting amputated parts to the hospital; latex gloves for eye examinations.



Fig. 9.4.8. First aid box

## 9.4.5: Handling fire emergencies

### Elaborate



Fires and explosions can severely damage or destroy premises or plant. Concentrations of small dust particles in the air can form a mixture that will explode if ignited. Often the explosions occur in dust extraction equipment and it is here that special precautions have to be taken. Secondary explosions can also follow the main explosion especially if dust deposits have accumulated in the workroom.

Rubber will also burn readily if ignited. There have been numerous fires started due to either badly maintained motors, electric sparks, or due to open wood burning stoves and cigarettes.

Make sure that all equipment is cleaned and that dust is not allowed to accumulate. Report any defects you see on equipment.

## 9.4.6: Types of fire extinguishers

### Explain



**Water fire extinguisher:** It is used to extinguish the fire on wood, paper, cloth etc. It should not be used to extinguish the fire over electrical equipment.

**Foam extinguishers (Foam extinguishers):** It is used to extinguish the fire caused by kerosene, spirit, thinner etc. It also should not be used to extinguish the fire caused on electrical equipment.

**Dry powder extinguishers (Dry powder extinguishers):** This is used to extinguish – the fire evolving due to flammable liquids such as petrol, diesel etc.

**Carbon di oxide fire extinguisher:** Carbon dioxide evolves from this fire extinguisher and it can be used to extinguish fire over electric equipment, liquid gases or fluids.

These fire-extinguishing equipment should be installed at the proper place and it should be inspected, repaired and refilled regularly.

Extinguisher		Type of Fire				
Colour	Type	Solids (wood, paper, cloth, etc)	Flammable Liquids	Flammable Gasses	Electrical Equipment	Cooking Oils & Fats
	Water	✓ Yes	✗ No	✗ No	✗ No	✗ No
	Foam	✓ Yes	✓ Yes	✗ No	✗ No	✓ Yes
	Dry Powder	✓ Yes	✓ Yes	✓ Yes	✓ Yes	✗ No
	Carbon Dioxide (CO2)	✗ No	✓ Yes	✗ No	✓ Yes	✓ Yes

Fig. 9.4.9. Fire Extinguisher chart

### 9.4.7: Class and type of fires

Say 

Class	Type
A	Wood, Paper, Ordinary combustibles Extinguish by cooling and quenching using water or dry chemicals
B	Gasoline, Oil, Grease, Other Greasy Liquids Extinguish by smothering, Cooling or heat shielding using carbon dioxide or dry Chemicals
C	Electrical equipment fires Extinguish with non-conducting agents such as carbon dioxide or dry chemicals. DO NOT USE WATER.
D	Fires in combustible metals extinguish by using specialized extinguishing powders

**Class of fire and type of extinguisher to be used**

<b>Class of fire</b>	<b>Fire extinguisher type</b>
B or C	Regular dry chemical
A, B, C, or D	Multi-Purpose dry chemical
D	Purple K dry chemical
B or C	KCL dry chemical
D	Dry powder special Compound
B or C	Carbon dioxide (Dry)
B or C	Halogenated agent (Gas)
A	Water
A	Water with anti-freeze
A or B	Water, Loaded steam style
B,	Foam

## 9.4.8: How to respond in case of Fire

### Explain



When fires do occur, the role of a person is to minimize the damage

- Extinguishing small fires
- Assisting in evacuations
- Notifying the local fire brigade promptly
- Extinguishing fires

All fires consist of heat plus material plus oxygen. Eliminating any one of these will eliminate a fire. Different types of fires require different responses to eliminate them. There are three general classifications of fires. Each requires a different type of fire extinguisher.

Class "A" fires involve wood, cloth, vegetable matter, paper, etc. Extinguishers for class A fires use either water or soda and acid foam. Class "B" fires involve combustible liquids such as oil, solvents, and grease. Extinguishers for class B fires use CO<sub>2</sub> or foam. Class "C" fires are electrical. Extinguishers for class C fires use CO<sub>2</sub>, which is not a conductor of electricity. Your life can depend on using the correct extinguishing agent and using it correctly.

### Elaborate



- 1- Do not use water on types B, C or D fires.
- 2- If it is used on type B fires it can spread the flames.
- 3- Water conducts electricity so if it is used on type C fires it can cause major shock.
- 4- If it is used on type D fires it will react violently causing an explosion.

## 9.4.9: How to operate a multipurpose fire extinguisher

### Explain



Remember **PASS**

**P- Pull the pin.** In some models you may have to remove a locking pin.

**A- Aim.** Aim low. Direct the hose or cone to the base of the fire.

**S-Squeeze.** Squeeze the handle. This will release the contents of the extinguisher.

**S-Sweep.** Sweep from side to side. Don't lessen the pressure on the handle. Try to keep it constant.



Fig. 9.4.10. Method of operating Fire extinguisher

It is important that you get fire extinguisher training before you have to use one. You don't want to waste valuable time trying to read directions or figure out how to remove a pin in an emergency situation. Other important information, like how far to stand away from a fire, when to move toward it, and how long the extinguisher contents last can only be understood by actually operating one. Make sure your employer and your Safety and Health Rep know that you need this training.

### Demonstrate



- Demonstrate first aid box and medicines in it.
- Demonstrate first aid for different injuries.
- Demonstrate types of fires and fire extinguisher for dosing each type of Fire.
- Demonstrate how to use a fire extinguisher.
- Demonstrate how to read evacuation plan and exit safely from workplace in case of any emergency.

## Activity-1

**Objective:** Demonstration of first aid activities.

**Procedure:**

- Demonstrate the participants how to provide general first aid to any person in the need.
- Provide the participants a first aid box.
- Ask them to demonstrate first aid techniques for common injuries, such as: abrasions and small cut, splinters, lacerations, fractures, eye injuries etc.

**Activity Outcome:**

- Participant will be able to learn how to provide common first aid in case of any accident.
- Facilitator will be able to judge the skill level acquired by the participants.

Activity	Time	Resources
Demonstration of fire extinguisher use	8 Hours	White board & markers, facilitator notes, laptop/ slides + projector, first aid videos, First Aid box.

Table 9.4.1

## Activity-2

**Objective:** Demonstration of fire extinguisher use.

**Procedure:**

- Demonstrate the participants how to use different fire extinguishers on applicable fires.
- Provide the participants different types of fire extinguishers and create fire for demonstration.
- Ask them to demonstrate the use of fire extinguisher on different fires, such as: Class-A, Class-B, Class-C, etc.

**Activity Outcome:**

- Participant will be able to learn how to use different fire extinguishers in case of any fire incident.
- Facilitator will be able to judge the skill level acquired by the participants.

Activity	Time	Resources
Demonstration of fire extinguisher use	8 Hours	White board & markers, facilitator notes, laptop/ slides + projector, fire extinguishing videos, safety shoes, safety goggle, mask, safety gloves, fire extinguisher, fire source

Table 9.4.2

## Answers

1. b    2. a    3. c    4. d    5. c    6. b    7. c    8. a    9. d    10. a





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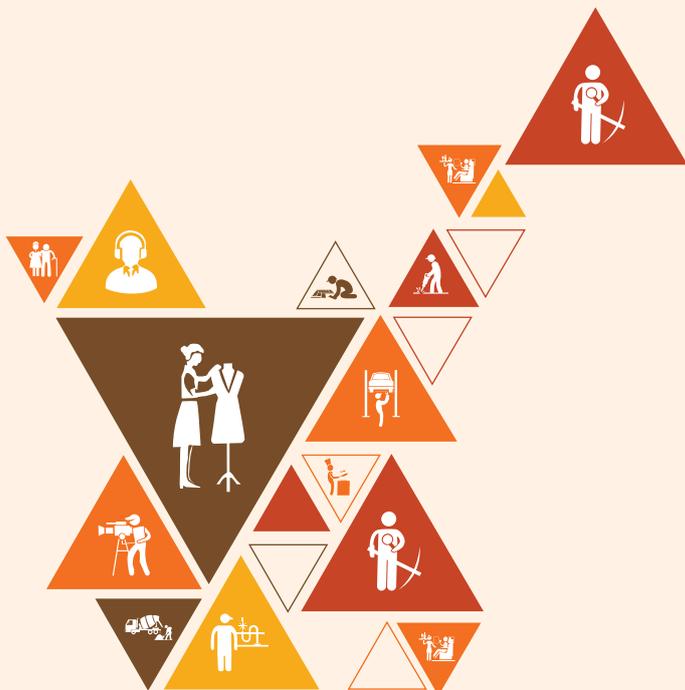
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Transforming the skill landscape



# 10. Creating Business Skills

Unit 10.1 – Creating Business Skills for Own Business



RSC/N5013

## Key Learning Outcomes

**At the end of this module, participant will be able to:**

1. Describe the evaluation method of a business opportunity.
2. Explain methodology of VAVE and PDCA for improving current business.
3. Outline requirement of land, labour and capital for creating a new business.
4. Discuss constituents of a risk appetite statement.
5. List the type of business entities can be incorporated in India.

## UNIT 10.1: Creating Business Skills for Own Business

### Unit Objectives

**At the end of this unit, the participant will be able to:**

1. Define what is business opportunity.
2. Describe the process of business opportunity identification.
3. List ways of improving current business condition.
4. Explain process of creating a business enterprise.
6. Name the aspects of a business plan.

### Resources to be used

- White Board + Marker /Black Board + Chalk
- Duster
- Laptop + Projector / Computer + Projector / Flipcharts
- Participant Handbook / Copies of Handout

### Do

- Greet the participants for the day.
- Give summary of previous session.
- Ask for any doubts in previous session.
- Acknowledge for their doubt-raising, if any. Clear the doubts.
- Give details of today's session and what they are going to learn.
- Encourage them to share their thoughts and doubts now and during process of this course

## 10.1.1: What is business opportunity?

### Ask

- Ask students what is business opportunities?
- Ask students what are the ways to evaluate the feasibility of the business idea?

### Explain

A business opportunity is chance to create a small/ medium or big enterprise and earning a continuous income by selling or providing any service to the customer.

For running a successful business there are two key requirements:

1. Uninterrupted supply of raw material or services,
2. Customer base with regular business.

Other aspect of business, such as: operation, sales, purchase, etc. are nitty gritty of business, which can be managed if above 2 key aspects are in control.

## Notes for Facilitation

- You could give example of business related to automobile tyre.
- Ask student about starting a business of tyre retreading.
- Set the context and describe the industry trends in tyre retreading business.

### 10.1.1.1: Identifying business opportunities

#### Ask

- Ask students what is business opportunities?
- Ask students what are the ways to evaluate the feasibility of the business idea?

#### Explain

Any good idea can be evaluated for business opportunity based on the following:

1. It should create value for your potential customer.
2. It should eliminate an existing pain of the customer or create a new demand segment.
3. It should have a potential to create good customer base and profit margins.
4. You should have through knowledge about the potential business.

For further confirming the validity of the business idea you should discuss the idea with anyone close to you having good knowledge of running successful business.

### 10.1.2: Improving current business

#### Ask

- Ask students what is need of improving current business?
- Ask students what are the ways to improve current business?

#### Explain

Explain to the participant that why it is always challenging to make improvement in current business. Some of the main reason for business stagnation are:

1. No new products or services available to offer,
2. Production or service cost are higher,
3. There is no new customer segment

There are some ideas for improving the current business.

1. VAVE (Value analysis value engineering) for making product cost competitive
2. Automation of processes for reducing manpower
3. Adding new product line for increasing customer base

### 10.1.2.1: VAVE

#### Ask



- Ask students about full form of VAVE?
- Ask students if they any other scientific way of improving product value?

#### Explain



Explain to the participant about concept of Value analysis and value engineering or VAVE, the name it is famously called with. In Value Analysis concept, all aspect of a product or services is critically analysed for the value it is creating for the final customer. Any process which is not creating value for the final customer is proposed for elimination.

Similarly, in Value Engineering, all the specification of a product and service are critically reviewed for its appropriateness. It is analyzed that what are the minimum specifications with which there will no deterioration in product's or service's performance.

After conducting trials and testing with new specification, the new product is launched.

#### Demonstrate



- Demonstrate VAVE process for a tyre for making the participant understand the concept.
- Demonstrate any product before VAVE and after VAVE.

### 10.1.2.2: PDCA

#### Explain



Explain to the participant about simplicity and effectiveness of PDCA cycle of activities.

Full form of PDCA is Plan, Do, Check, Act.

In this concept, it is advised that before carrying out any activity, you should properly plan for that activity. Then you should carry out the activity. After carrying out the activity, you should check the outcome of the activity and review, whether the outcome is as per the expectation. If there is any difference in expected outcome and actual outcome, you should again act as per the requirement.

#### Demonstrate



- Demonstrate PDCA cycle for any activity in tyre retreading process.
- Explain the benefit of PDCA process.

### 10.1.3: Creating a business enterprise

#### Explain



Explain to the participant about key factors which are required for creating a business enterprise.

There are three main factors for creating any business enterprise:

- 1- Land or Space to carry out the business
- 2- Labour or suitable employees for running the business
- 3- Capital or money required to procure the machinery or assets and running operations.

#### 10.1.3.1: Land

#### Ask



- Ask students, what should be the ideal location to open a tyre retreading shop?
- Ask students if it is advisable to open a tyre retreading shop in truck repair market?

#### Elaborate



Elaborate the importance of selecting land for running a business.

Location of the land or premises selected for carrying out business activities is very important. Generally, it should be near to your customer. Your customer should not have any problem in locating your place. It should be clean and spacious as per the need of business.

Initially, you can take the place on rent. Once your business is established then you can buy your own place. It is never recommended to invest huge capital in the initial phase of your business.

#### 10.1.3.2: Labour

#### Ask



- Ask students, what kind of manpower would be needed in a tyre retreading shop?
- Ask students how they would recruit the manpower for their tyre retreading shop?

#### Elaborate



Elaborate the importance of the next aspect of the business, which is labour.

Whether you are planning a small business or big enterprise, you will always require labour or manpower to assist you. Always recruit good, hard working and sincere manpower after carrying out complete due diligence.

It is better to pay little higher to a skilled manpower than to train someone. Create your own balance in manpower with highly skilled, semi-skilled and unskilled manpower.

### 10.1.3.3: Capital

#### Ask



- Ask students, what is the need of money in starting any business?
- Ask students if it is possible to start any business without any money?

#### Elaborate



Elaborate the need of capital for starting the business.

It is impossible to start any business without capital. No matter how small capital is needed but capital is required for creating assets, hiring manpower, creating working place, etc.

Source of capital could be:

1. Own money
2. Lending from bank
3. Lending from private institutes
4. Investment from venture capitalist

### 10.1.3.4: Business Plan

#### Explain



Explain to the participant the key aspects of a business plan and its requirement for starting a business.

Any business plan has following details:

1. Executive Summary
2. Business Description
3. Market Analysis
4. Organization and Management
5. Service or Product Line
6. Marketing and Sales
7. Funding Request

### 10.1.4: Risk in business

#### Ask



- Ask students, why there is a risk in starting any business?
- Ask students what are the potential risk in starting tyre retreading business?

## Elaborate

Elaborate the risk associated with any business.

As a business, you have to define the potential risk associated with your business. Benefit of having defined risk statement is, it sets risk taking limits within the company. The risk appetite statement should convey the following:

- The nature of risks the business faces.
- Which risks the company is comfortable taking on and which risks are unacceptable.
- The nature of risks the business faces.
- Which risks the company is comfortable taking on and which risks are unacceptable.
- How much risk to accept in all the risk categories.
- The desired tradeoff between risk and reward.
- Measures of risk and methods of examining and regulating risk exposures.

### 10.1.5: Types of business entities

## Explain

Explain to the participant the types of business ownerships available in India.

You can own any of below business entities:

1. Sole Proprietorship - owned by single person
2. Partnership - owned by one or more persons
3. Limited Liability Partnership - partnership with limited individual's liability
4. Private limited company
5. Limited company

## Team Activity-1

**Objective:** Demonstration of business plan creation.

**Procedure:**

- Demonstrate the participants how to create a business plan for a tyre retreading business.
- Provide the participants business scenario of proposed tyre retreading business.
- Ask them to create a business plan as per business scenario explained.

**Activity Outcome:**

- Participant will be able to create business plan.
- Facilitator will be able to judge the skill level acquired by the participants.

Activity	Time	Resources
Demonstration of Business plan creation	4 Hours	White board & markers, facilitator notes, laptop/ slides + projector, formats for business plan

Table 10.1.1







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Transforming the skill landscape



# 11. Employability & Entrepreneurship Skills

Unit 11.1 – Personal Strengths & Value Systems

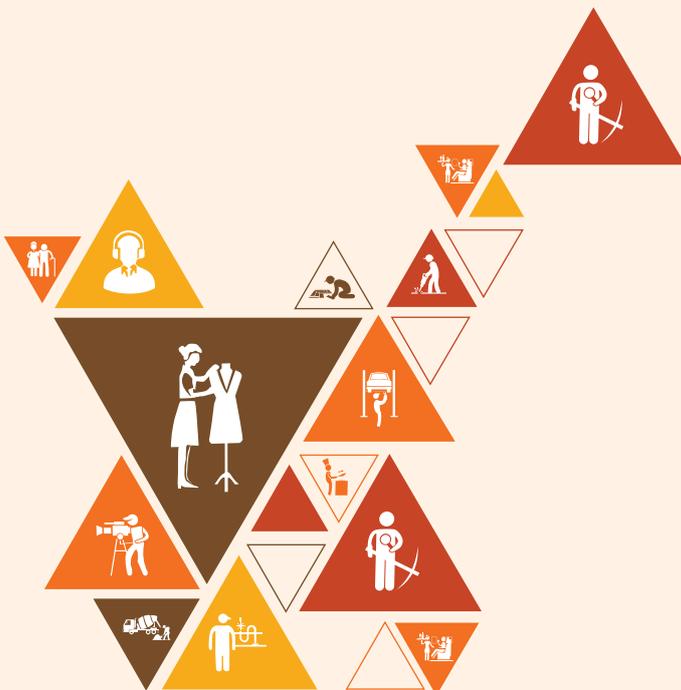
Unit 11.2 – Digital Literacy: A Recap

Unit 11.3 – Money Matters

Unit 11.4 – Preparing for Employment & Self Employment

Unit 11.5 – Understanding Entrepreneurship

Unit 11.6 – Preparing to be an Entrepreneur



## Key Learning Outcomes



### At the end of this unit, participant will be able to:

1. Explain the meaning of health
2. List common health issues
3. Discuss tips to prevent common health issues
4. Explain the meaning of hygiene
5. Discuss the purpose of Swacch Bharat Abhiyan
6. Explain the meaning of habit
7. Discuss ways to set up a safe work environment
8. Discuss critical safety habits to be followed by employees
9. Explain the importance of self-analysis
10. Discuss motivation with the help of Maslow's Hierarchy of Needs
11. Discuss the meaning of achievement motivation
12. List the characteristics of entrepreneurs with achievement motivation
13. List the different factors that motivate you
14. Discuss the role of attitude in self-analysis
15. Discuss how to maintain a positive attitude
16. List your strengths and weaknesses
17. Discuss the qualities of honest people
18. Describe the importance of honesty in entrepreneurs
19. Discuss the elements of a strong work ethic
20. Discuss how to foster a good work ethic
21. List the characteristics of highly creative people
22. List the characteristics of highly innovative people
23. Discuss the benefits of time management
24. List the traits of effective time managers
25. Describe effective time management technique
26. Discuss the importance of anger management
27. Describe anger management strategies
28. Discuss tips for anger management
29. Discuss the causes of stress
30. Discuss the symptoms of stress
31. Discuss tips for stress management
32. Identify the basic parts of a computer
33. Identify the basic parts of a keyboard
34. Recall basic computer terminology
35. Recall the functions of basic computer keys

36. Discuss the main applications of MS Office
37. Discuss the benefits of Microsoft Outlook
38. Discuss the different types of e-commerce
39. List the benefits of e-commerce for retailers and customers
40. Discuss how the Digital India campaign will help boost e-commerce in India
41. Describe how you will sell a product or service on an e-commerce platform
42. Discuss the importance of saving money
43. Discuss the benefits of saving money
44. Discuss the main types of bank accounts
45. Describe the process of opening a bank account
46. Differentiate between fixed and variable costs
47. Describe the main types of investment options
48. Describe the different types of insurance products
49. Describe the different types of taxes
50. Discuss the uses of online banking
51. Discuss the main types of electronic funds transfers
52. Discuss the steps to prepare for an interview
53. Discuss the steps to create an effective Resume
54. Discuss the most frequently asked interview questions
55. Discuss how to answer the most frequently asked interview questions
56. Discuss basic workplace terminology
57. Discuss the concept of entrepreneurship
58. Discuss the importance of entrepreneurship
59. Describe the characteristics of an entrepreneur
60. Describe the different types of enterprises
61. List the qualities of an effective leader
62. Discuss the benefits of effective leadership
63. List the traits of an effective team
64. Discuss the importance of listening effectively
65. Discuss how to listen effectively
66. Discuss the importance of speaking effectively
67. Discuss how to speak effectively
68. Discuss how to solve problems
69. List important problem solving traits
70. Discuss ways to assess problem solving skills
71. Discuss the importance of negotiation

72. Discuss how to negotiate
73. Discuss how to identify new business opportunities
74. Discuss how to identify business opportunities within your business
75. Explain the meaning of entrepreneur
76. Describe the different types of entrepreneurs
77. List the characteristics of entrepreneurs
78. Recall entrepreneur success stories
79. Discuss the entrepreneurial process
80. Describe the entrepreneurship ecosystem
81. Discuss the purpose of the Make in India campaign
82. Discuss key schemes to promote entrepreneurs
83. Discuss the relationship between entrepreneurship and risk appetite
84. Discuss the relationship between entrepreneurship and resilience
85. Describe the characteristics of a resilient entrepreneur
86. Discuss how to deal with failure
87. Discuss how market research is carried out
88. Describe the 4 Ps of marketing
89. Discuss the importance of idea generation
90. Recall basic business terminology
91. Discuss the need for CRM
92. Discuss the benefits of CRM
93. Discuss the need for networking
94. Discuss the benefits of networking
95. Discuss the importance of setting goals
96. Differentiate between short-term, medium-term and long-term goals
97. Discuss how to write a business plan
98. Explain the financial planning process
99. Discuss ways to manage your risk
100. Describe the procedure and formalities for applying for bank finance
101. Discuss how to manage your own enterprise
102. List important questions that every entrepreneur should ask before starting an enterprise

## Unit 11.1: Personal Strengths & Value Systems

### Unit Objectives

At the end of this unit, participants will be able to:

1. Explain the meaning of health
2. List common health issues
3. Discuss tips to prevent common health issues
4. Explain the meaning of hygiene
5. Discuss the purpose of Swacch Bharat Abhiyan
6. Explain the meaning of habit
7. Discuss ways to set up a safe work environment
8. Discuss critical safety habits to be followed by employees
9. Explain the importance of self-analysis
10. Discuss motivation with the help of Maslow's Hierarchy of Needs
11. Discuss the meaning of achievement motivation
12. List the characteristics of entrepreneurs with achievement motivation
13. List the different factors that motivate you
14. Discuss the role of attitude in self-analysis
15. Discuss how to maintain a positive attitude
16. List your strengths and weaknesses
17. Discuss the qualities of honest people
18. Describe the importance of honesty in entrepreneurs
19. Discuss the elements of a strong work ethic
20. Discuss how to foster a good work ethic
21. List the characteristics of highly creative people
22. List the characteristics of highly innovative people
23. Discuss the benefits of time management
24. List the traits of effective time managers
25. Describe effective time management technique
26. Discuss the importance of anger management
27. Describe anger management strategies
28. Discuss tips for anger management
29. Discuss the causes of stress
30. Discuss the symptoms of stress
31. Discuss tips for stress management

## 11.1.1: Health, Habits, Hygiene: What is Health?

### Resources to be Used

- Participant Handbook

### Ask

- What do you understand by the term “Health?”
- According to you, who is a healthy person?

### Say

- Discuss the meaning of health and a healthy person as given in the Participant Handbook.

### Ask

- When did you visit the doctor last? Was it for you or for a family member?

### Say

- Discuss the common health issues like common cold, allergies etc. Refer to the Participant Handbook.
- Let us do a small activity. I will need some volunteers.

### Role Play

- Conduct a small skit with volunteers from the class. Consider one of the villagers has been appointed as a health representative of the village, what measures will you as a health representative suggest to the common villagers to prevent common health issues discussed.
- You will need at least 4 volunteers (Narrator, Health Representative, Head of the Village, Doctor).
- Explain the health concerns of the village to the Narrator. The Narrator will brief the class about the skit.
- Give the group of volunteers, 5 minutes to do discuss.
- At the end of 5 minutes, ask the group to present the skit to the class assuming them as the villagers.
- The class can ask questions to the group as a common villager.

### Summarize

- Through this activity we got some tips on how can we prevent these common health issues.

**Say** 

- Let us now see how many of these health standards we follow in our daily life.

**Activity** 

- Health Standard Checklist from the Participant Handbook.

**Ask** 

- How many of you think that you are healthy? How many of you follow healthy habits?

**Say** 

- Let's do an exercise to find out how healthy you are.
- Open your Participant Handbook section 'Health, Habits, Hygiene: What is Health?', and read through the health standards given.
- Tick the points which you think are true for you.
- Try to be as honest as possible as this test is for your own learning.

**Do** 

- Ensure that all the participants have opened the right page in the Participant Handbook.
- Read aloud the points for the participants and explain if required.
- Give them 5 minutes to do the exercise.
- At the end of 5 minutes, ask the participants to check how many ticks have they got.

**Summarize** 

- Tell them that they need to follow all the tips given in this checklist regularly in order to remain healthy and fit.

**Ask** **Discuss:**

- Is it necessary to practice personal hygiene every day? Why?
- How does a person feel when they do not practice good personal hygiene? Why?
- Can good personal hygiene help a person feel good about his/her self? How?

**Say** 

- Discuss the meaning of hygiene as given in the Participant Handbook.

**Activity** 

- Health Standard Checklist: Hygiene

## Say

- Let's do an exercise to find out if we maintain good hygiene habits or not.
- Open the Participant Handbook and read through the Health Standard checklist given.
- Tick the points which you think are true for you.
- Try to be as honest as possible as this test is for your own learning.

## Do

- Ensure that all the participants have opened the right page in the Participant Handbook.
- Read aloud the points for the participants and explain if required.
- Give them 5 minutes to do the exercise. .
- At the end of 5 minutes, ask the participants to check how many ticks have they got.
- Ask them to calculate their score.
- Tell them what each score indicates by reading aloud what has been mentioned in the Participant Handbook.

## Ask

- How many of you have heard about “Swachh Bharat Abhiyan”?
- Can you tell the class what it is about?

## Summarize

- Tell them about Swachh Bharat Abhiyan as given in the Participant Handbook and request them to take a pledge to keep our country clean.

## Ask

- What is a habit?

## Say

- Discuss some good habits which can become a way of life.

## Summarize

- Tell them about good and bad habits and the reasons to make good habits a way of life.

## 11.1.2: Safety

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss ways to set up a safe work environment
- Discuss critical safety habits to be followed by employees

### Resources to be Used

- Participant Handbook
- Safety signs and symbols
- Safety equipments
- Blank papers
- Pens

### Say

- There are many common safety hazards present in most workplaces at one time or another. They include unsafe conditions that can cause injury, illness and death.
- Safety Hazards include:
  - Spills on floors or tripping hazards, such as blocked aisles or cords running across the floor.
  - Working from heights, including ladders, scaffolds, roofs, or any raised work area.
  - Unguarded machinery and moving machinery parts; guards removed or moving parts that a worker can accidentally touch.
  - Electrical hazards like cords, missing ground pins, improper wiring.
  - Machinery-related hazards (lockout/tag out, boiler safety, forklifts, etc.)

### Team Activity

#### Safety Hazards

- There are two parts to this activity.
- First part will cover the potential safety hazards at work place.
- Second part will cover a few safety signs, symbols and equipments at work place.
- Use this format for the first part of the activity.

PART 1		
Hazard	What could happen?	How could it be corrected?

Table 10.1.1

### Ask

- How could you or your employees get hurt at work?

## Say

- Let's understand it better with the help of an activity. You will be given a handout within your groups. You have to think about the possible hazards of your workplace, what damage these hazards could cause and about the corrective action.

## Do

- Divide the class into five to six groups of four participants each.
- Put the format on the board for the activity.
- Give blank papers and pens to each group.
- The group is expected to think and discuss the potential safety hazards in the workplace.
- Ask the group to discuss and fill the format using the blank sheet.
- Give the groups 5 minutes for the activity.
- For the second part of the activity, show the class some pictures of safety signs, symbols and equipments.
- Now they will put down a few safety symbols, signs or equipment against the safety hazards identified.
- Give them 5 to 10 minutes to discuss and draw/note it.
- At the end of 10 minutes the groups will present their answers to the class.

## Say

- Now, let's discuss the answers with the class.
- All the groups will briefly present their answers.

## Do

- Ask the audience to applaud for the group presentation.
- Ask de-brief questions to cull out the information from each group.
- Keep a check on time.
- Tell the group to wind up the discussion quickly if they go beyond the given time limit.

## Ask

### De-briefing

- What did you learn from the exercise?
- As an entrepreneur, is it important to ensure the safety of your employees from possible hazards? Why?

## Summarize

- Ask the participants what they have learnt so far.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the tips to design a safe workplace and non-negotiable employee safety habits.

## 11.1.3: Self Analysis- Attitude, Achievement Motivation: What is Self Analysis?

### Unit Objectives

At the end of this unit, participants will be able to:

- Explain the importance of self- analysis
- Discuss motivation with the help of Maslow's Hierarchy of Needs
- Discuss the meaning of achievement motivation
- List the characteristics of entrepreneurs with achievement motivation
- List the different factors that motivate you
- Discuss the role of attitude in self- analysis
- Discuss how to maintain a positive attitude
- List your strengths and weaknesses

### Resources to be Used

- Participant Handbook
- Old newspapers
- Blank papers
- Pencils/ pens

### Activity

- This is a paper pencil activity.

What are the three sentences that describe you the best?

What do you need to live happily?

What are your strengths and weaknesses?

### Do

- Write the three questions on the board/ flipchart before the session begins.
- Give plain papers and pencils/ pens to each participant.
- Tell participants to write the answer for the three questions on the paper.
- Tell them the purpose of this activity is not to judge anyone but to understand more about self.

### Say

- Discuss the concept of Self Analysis and motivation with reference to Maslow's Hierarchy of Needs as discussed in the Participant Handbook.

### Team Activity

#### Tower building

- Each group which will create tower using the old newspapers.

**Do** 

- Divide the class into groups.
- Give them some old newspapers.
- The task is to create a tower out of the newspapers.
- The group which will create the highest tower standing on its own will be considered the winning group.
- Groups can use as many newspapers as they want to and in any way they want.

**Ask** 

- What did the winning group do differently?
- If you were given a chance, how would you have made the tower differently?
- How did you feel while making the tower?
- Did you feel motivated?

**Say** 

- Discuss the concept of achievement motivation and characteristics of entrepreneurs with achievement motivation as discussed in the Participant Handbook.

**Ask** 

- Is your attitude positive or negative?

**Say** 

- Let me tell you a story :

**It's Little Things that Make a Big Difference.**

There was a man taking a morning walk at the beach. He saw that along with the morning tide came hundreds of starfish and when the tide receded, they were left behind and with the morning sun rays, they would die. The tide was fresh and the starfish were alive. The man took a few steps, picked one and threw it into the water. He did that repeatedly. Right behind him there was another person who couldn't understand what this man was doing. He caught up with him and asked, "What are you doing? There are hundreds of starfish. How many can you help? What difference does it make?" This man did not reply, took two more steps, picked up another one, threw it into the water, and said, "It makes a difference to this one." What difference are we making? Big or small, it does not matter. If everyone made a small difference, we'd end up with a big difference, wouldn't we?

**Ask** 

- What did you learn from this story?

**Activity** **What Motivates You?**

- This is an individual activity.
- It is an exercise given in the Participant Handbook.

**Do** 

- Ask the class to open their Participant Handbook and complete the exercise given in the section What Motivates You?
- Ensure that the participants have opened the correct page for the activity.
- Give the class 5 minutes to complete the activity.

## Say

- Discuss the concept of attitude and how to cultivate a positive attitude as discussed in the Participant Handbook.

## Summarize

- Close the discussion by summarizing how self-analysis, knowledge about what motivates you and your positive attitude can help in your business as well in life.

## 11.1.4: Honesty & Work Ethics

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the qualities of honest people
- Describe the importance of honesty in entrepreneurs
- Discuss the elements of a strong work ethic
- Discuss how to foster a good work ethic

### Resources to be Used

- Participant Handbook

### Ask

- What do you understand by honesty?
- Why is it important for entrepreneurs to be honest?
- Do you remember any incident where your honesty helped you in gaining confidence?
- Do you remember any incident where someone lost business due to dishonesty?

### Say

- Talk about honesty, qualities of an honest person, and the importance of honesty in entrepreneurs as discussed in the Participant Handbook.
- “Let's understand it better with the help of some case scenarios. You will be given some cases within your groups. You have to analyse the case scenario that has been given to you and then find an appropriate solution to the problem.
- Keep your discussion focussed around the following:
  - What went wrong?
  - Who was at fault?
  - Whom did it impact- the customer or the businessman?
  - How would it impact the business immediately? What would be the long term impact?
  - What could be done?
  - What did you learn from the exercise?

### Do

- Divide the class into four groups of maximum six participants depending on the batch size.
- Give one case study to each group.
- Instruct them to read the case carefully.
- Put down the de-brief questions on the board and ask the groups to focus their discussion around these questions.
- The group is expected to analyse and discuss the case amongst them and find a solution to the given problem. Give the class 5-10 minutes to discuss the case and note down their solutions.
- At the end of 10 minutes the team should present their case solution to the class. The presentation can be a narration or a role play.
- Ask the group to select a group leader for their group. The group leader to discuss and assign roles to the group members for the presentation.

## Team Activity

### Case Study Analysis

#### Scenario 1

Aakash has a small mobile retail sales and repair shop in Allahabad. He has one of the most popular outlets and has great rapport with his customers.

It's around 11 AM when a customer barges in to the shop and starts shouting at Aakash for giving her a faulty instrument. The screen of her mobile is cracked from one side. Aakash remembered thoroughly checking the handset before handing it over to the customer. The customer threatens to sue him and to go to Consumer Court for cheating her. Now, the problem occurred somewhere outside the shop but as other customers were listening to the conversation, it might impact his business. The situation needs to be managed very sensitively. What would you do if you were in Aakash's place?

#### Scenario 2

Rajni does beautiful Phulkari embroidery on suits and sarees. She has a small home-based business. She has a huge list of customers on Facebook and WhatsApp who give her orders regularly. Smita is one of her old and regular customers. As her sister-in-law's wedding was around the corner, Smita wanted to buy few handcrafted Phulkari duppatta. She placed an order for three duppattas via WhatsApp and requested Rajni to send them as soon as possible. When the parcel reached Smita through courier she found that out of the three duppattas, only one was hand embroidered and the other two had machine embroidery on them. Even the length and the quality of the material was not as desired. Smita was heartbroken. It was a complete waste of money and moreover she couldn't wear what she had planned to during the wedding functions. She sent a message to Rajni on WhatsApp, expressing her anger and disappointment.

Smita has also sent a feedback and expressed her disappointment on the social media... this will directly affect Rajni's business. What would you do if you were in Rajni's place?

#### Scenario 3

Shankar is a tattoo artist who has a small tattoo showroom in a big, reputed mall in New Delhi. Mr Saksham had an appointment for today, at 11:00 am but he reached at 11:50 am. Meanwhile, Shankar had to reschedule his next appointment. After availing Shankar's services, Mr Saksham started yelling in an abusive language, refusing to pay the requisite amount, and finding faults in the services provided by him. Who was at fault in this case? What should Shankar do? Should he confront Saksham or give in to the demands of the client?

#### Scenario 4

Shailender is an online cloth reseller who does business through social networking sites such as Facebook and WhatsApp. Priyanka made online payment for a dress to Shailender. But she did not receive the dress for a month. When she asked for a cancellation, Shailender started misleading her. For almost 45 days, he kept promising her that he will pay the amount today, tomorrow, day after etc. Even after repeated calls and messages when she did not receive the payment or the dress, she decided to write a post against him on a popular social media platform. As a result, Shailender lost lots of customers and his flourishing business faced a major crisis. How could this situation have been managed?

## Say

- Now, let's discuss the problem and solution with the larger group.
- The group will first briefly describe the case to the class.
- Then discuss the issue identified and the proposed solution.
- Once the presentation is over, the class can ask their questions.

## Do



- Congratulate each group for the group presentation.
- Ask the audience to applaud for them.
- Ask de-brief questions to cull out the information from each group.
- Keep a check on time. Tell the group to wind up the discussion quickly if they go beyond the given time limit.

## Summarize



- Ask the participants what they have learnt from the exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the importance of honesty and work ethics for entrepreneurs.

## 11.1.5: Creativity and Innovation

### Unit Objectives

At the end of this unit, participants will be able to:

- List the characteristics of highly creative people
- List the characteristics of highly innovative people

### Resources to be Used

- Participant Handbook
- Chart papers
- Marker pens

### Ask

- You must be aware of the term 'Rags to riches' and heard stories related to the term.
- What do these stories tell us?
- What was so special about these people?

### Say

- Let's have a look at these stories.
- There are some inspiring stories about people which I would like to share with you.
- Narrate these stories to the class.

#### **A.P.J. Abdul Kalam**

Who has not heard of A.P.J. Abdul Kalam: Avul Pakir Jainulabdeen Abdul Kalam hailed from a very humble background. His father was a boat owner. To help his family, Kalam would work as a newspaper vendor. With limited resources, he graduated in Physics and studied aerospace engineering. He was instrumental in India's step towards nuclear energy. In 2002, he became the 11th President of India.

#### **Water filter/purifier at source**

Two young boys studying in classes 4 and 5, from Lingzya Junior High School, Sikkim designed a simple innovative low cost water purifier.

Inspiration behind the idea: Most people today prefer to use a water filter/purifier at their home.

Both the children have given idea to have filter/purifier at the source of water so that everyone has access to clean water without having to make an investment in purchasing a filter/purifier.

Spring's idea is to have a centralised purification system at the point of distribution like water tank while Subash's idea is to have such purifiers attached to public taps.

Source: <http://www.rediff.com/getahead/report/achievers-top-31-amazing-innovations-from-young-indians/20151208.htm>

#### **Solar seeder**

This is a story of a innovative solar seeder and developed by Subash Chandra Bose, a class 8, student from St Sebasthiyar Matriculation School, Pudukkottai, Tamil Nadu. Subash has developed a solar powered seed drill, which can undertake plantation for different size of seeds at variable depth and space between two seeds.

Source: <http://www.rediff.com/getahead/report/achievers-top-31-amazing-innovations-from-young-indians/20151208.htm>

**Looms for physically challenged**

Now this is really inspiring of two sisters, Elakkiya a Class 6 student and Pavithra a Class 9 student of SRC Memorial Matriculation, Erode, Tamil Nadu.

The two sisters have come up with loom for lower limbed physically challenged. In their loom they have replaced the pedal operated system with a motor and a gearbox attached to a pulley mechanism.

Source: <http://www.rediff.com/getahead/report/achievers-top-31-amazing-innovations-from-young-indians/20151208.htm>

**Ask** 

- If they can, why can't you?
- Discuss concepts related to 'Creativity and Innovation' with the participants as given in the Participant Handbook.

**Say** 

- Recall the stories on motivation.
- What is the inner drive that motivates people to succeed?
- Let's learn more about such creative and innovative entrepreneurs with the help of an activity.

**Team Activity** 

- This is a group activity.

- Think of any one famous entrepreneur and write a few lines about him or her.

**Activity De-brief**

- Why did you choose this particular entrepreneur?
- What is his/her brand name?
- What creativity does he/she possess?
- What was innovative about their ideas?

**Do** 

- Instruct the participants that this is group work.
- Divide the class into small groups of 4 or 6 depending on the batch size.
- Give each group a chart paper.
- Tell the participants they have to write a few lines about any one famous entrepreneur.
- Give the participants 10 minutes to discuss and write.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.
- Ask each group to read out what they have written.
- Ask the de-brief questions.

## Summarize

- Summarize the unit by asking participants if they know of some people who are highly creative and innovative in their approach.
- Ask them to share some experiences about these people with the class.

## Notes for Facilitation

- Source for stories on innovations:

<http://www.rediff.com/getahead/report/achievers-top-31-amazing-innovations-from-young-indians/20151208.htm>

## 11.1.6: Time Management

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the benefits of time management
- List the traits of effective time managers
- Describe effective time management techniques

### Resources to be Used

- Participant Handbook

### Ask

**Does this sound like you?**

- I can never get enough time to finish what I am doing in a day.
- I have so many things to do that I get confused.
- I want to go for a walk and exercise, but I just do not have the time.
- I had so much to do, so I could not deliver that order on time.
- I would love to start my dream business; but, I just do not have the time.

### Example

- Let's look at these two examples:

#### Example 1:

Ankita works from home as a freelance writer. She says she can easily put in 8 hours of dedicated work in a day. Because she works from home, she saves money on travel and has a comfortable work routine. But there is a challenge and it is distraction. As she works from home, she can easily just get up and sit down on the sofa to watch TV, wasting valuable time. She may have chores to do, errands to run and bills to pay. She ends up working only two to three hours a day and the result is, her work gets piled up. She is unable to take on more work due to this. Even though her quality of work is appreciated her clients are not very happy about the delay in submission.

#### Example 2:

Javed has started a successful online selling company from home and makes a good living from his sales. He has set up a small office space in his living room. As both his parents are working full-time, he also has the role of taking care of his two younger siblings. He almost spends half of his day with the younger kids. He does not mind it but it means taking time away from the work. He is still able to manage his online business with these commitments. He wants to spend some more dedicated hours so as to increase his profits. He also wants to look into new business avenues. What should he be doing.

### Ask

- Does this happen with you too?
- Do you find it difficult to prioritize your work?
- Are you able to manage your time effectively?

## Activity

- Conduct a group discussion based on the above examples.
- Direct the discussion on how to prioritize work and manage time effectively.

## Say

- Time management is not only about how hard you work but also about how smart you work.
- Discuss “What is Time Management” with the participants as given in the Participant Handbook.

## Ask

- Why is it important to manage time? How does it help?
- What happens when you don't manage your time effectively?
- Do you find it difficult to prioritize your work?

## Say

- Discuss the benefits of time management given in the Participant Handbook.
- Let's learn effective time management with the help of an activity.

## Activity

### Effective Time Management

- This activity has two parts:

#### PART 1 TO-DO LIST

- You have to make a to-do list.
- List all of the activities/ tasks that you have to do.
- Try to include everything that takes up your time, however unimportant it may be.
- If they are large tasks, break them into action steps, and write this down with the larger task.
- You can make one list for all your tasks or have separate to-do lists for personal and professional tasks.

#### PART 2 URGENT-IMPORTANT GRID

- You have to make a grid as shown on the board here. .
- This grid has four boxes. As you can see, each box has a different heading.
- At the heart of the urgent-important grid, are these two questions:
  - ♦ Is this task important?
  - ♦ Is this task urgent?
- Now, you have to think about each activity that you have written in your to-do list and put it into one of the four categories.
- **What do these categories depict?**
- **Category 1: Urgent/Important**
  - ♦ This category is for the highest priority tasks. They need to get done now.

- **Category 2: Not Urgent/Important**

- This is where you want to spend most of your time.
- This category allows you to work on something important and have the time to do it properly.
- This will help you produce high quality work in an efficient manner.
- The tasks in this category are probably the most neglected ones, but also the most crucial ones for success.
- The tasks in this category can include strategic thinking, deciding on goals or general direction and planning – all vital parts of running a successful business.

- **Category 3: Urgent/Not Important**

- This is where you are busy but not productive. These tasks are often mistaken to be important, when they're most often busywork.
- Urgent but not important tasks are things that prevent you from achieving your goals.
- However, some may be activities that other people want you to do.

- **Category 4: Not Important and Not Urgent**

- This category doesn't really include tasks, but rather habits that provide comfort, and a refuge from being disciplined and rigorous with your time management.
- Some may be activities that other people want you to do.
- These might include unplanned leisure activities as well.

**TO- DO list format**

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	

**URGENT-IMPORTANT GRID**

**URGENT/ IMPORTANT**

- Meetings
- Last minute demands
- Project deadlines
- Crisis

**NOT URGENT/ IMPORTANT**

- Planning
- Working towards goals
- Building relationship
- Personal commitments

**1**

**2**

**3**

**4**

- Interruptions
- Phone calls/ E-mails
- Other people's minor demands

**URGENT/ NOT IMPORTANT**

- Internet surfing
- Social media
- Watching TV

**NOT URGENT/ NOT IMPORTANT**

**URGENT/ IMPORTANT GRID format**

**URGENT/ IMPORTANT**

**NOT URGENT/ IMPORTANT**

**1**

**2**

**3**

**4**

**URGENT/ NOT IMPORTANT**

**NOT URGENT/ NOT IMPORTANT**

## Do

- Put down the formats for the to-do list and the urgent/ important grid on the board.
- Instruct the participants to prepare their to-do list first.
- Give the participants 10 minutes to prepare the list.
- Once done, instruct them to divide the tasks in to-do list into the four categories.
- Explain the four categories to the participants giving examples specific to their context.
- As you explain the categories fill the grid with the type of tasks.
- Give the participants 40 minutes to fill the grid.
- Then explain how to balance the tasks between the four categories.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

## Say

### Activity De-brief:

#### How can we balance tasks between the four categories?

#### How to manage time through this grid?

- **Category 1: Urgent/Important**
  - Try to keep as few tasks as possible here, with the aim to eliminate.
  - If you spend too much of your time in this category, you are working solely as a trouble shooter, and never finding time to work on longer-term plans.
- **Category 2: Not Urgent/Important**
  - Plan these tasks carefully and efficiently as they are most crucial ones for success.
  - If necessary, also plan where you will do these tasks, so that you're free from interruptions.
  - Include strategic thinking, deciding on goals or general direction and planning in your planning process.
- **Category 3: Urgent/Not Important**
  - Ask yourself whether you can reschedule or delegate them.
  - A common source of such activities is other people. Sometimes it's appropriate to say "no" to people politely, or to encourage them to solve the problem themselves.
- **Category 4: Not Important and Not Urgent**
  - You also want to minimize the tasks that you have in this category.
  - These activities are just a distraction – avoid them if possible.
  - You can simply ignore or cancel many of them.
  - Politely say "no" to work assigned by others, if you can, and explain why you cannot do it.
  - Schedule your leisure activities carefully so that they don't have an impact on other important tasks.
- Discuss the traits of effective time managers and effective time management techniques as given in the Participant Handbook.

## Summarize

- Discuss the traits of effective time managers and effective time management techniques as given in the Participant Handbook.

## Notes for Facilitation



- Here is a short story. You can conclude the session narrating the story. To make it more interesting you can perform the demonstration described and discuss the short story.
  - ♦ One day an expert in time management was speaking to a group of students. As he stood in front of the group, he pulled out a large wide-mouthed glass jar and set it on the table in front of him. Then he took out a bag of about a dozen rocks and placed them, one at a time, into the jar. When the jar was filled to the top and no more rocks would fit inside, he asked, "Is this jar full?" Everyone in the class said, "Yes." Then he said, "Really?"
  - ♦ He reached under the table and pulled out a bucket of gravel (small stones). He dumped some gravel in and shook the jar causing pieces of gravel to work themselves down into the space between the rocks. Then he asked the group once more, "Is the jar full?" By this time, the class began to understand. "Probably not," one of them answered. "Good!" he replied.
  - ♦ He reached under the table and brought out a bucket of sand. He started dumping the sand in the jar and it went into all of the spaces left between the rocks and the gravel. Once more he asked the question, "Is this jar full?" "No!" the class shouted. Once again he said, "Good." Then he grabbed a jug of water and began to pour it in until the jar was filled to the brim. Then he looked at the class and asked, "What is the point of this illustration?" "One student raised his hand and said, "No matter how full your schedule is, if you try really hard you can always fit some more things in it!" "No," the speaker replied, "that's not the point. The truth this illustration teaches us is: If you don't put the big rocks in first, you'll never get them in at all." What are the 'big rocks' in your life? Your children; your loved ones; your education; your dreams; a worthy cause; teaching or mentoring others; doing things that you love; time for yourself; your health; your mate (or significant other). Remember to put these BIG ROCKS in first or you'll never get them in at all. If you sweat about the little stuff (the gravel, sand, and water) then you'll fill your life with little things you worry about that don't really matter, and you'll never have the time you need to spend on the big, important stuff (the big rocks).
- End the story with these lines...
 

So, tonight, or in the morning tomorrow, when you are reflecting on this short story, ask yourself this question: What are the 'big rocks' in my life? Then, put those in your jar first

## 11.1.7: Anger Management

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the importance of anger management
- Describe anger management strategies
- Discuss tips for anger management

### Resources to be Used

- Participant Handbook

### Ask

- What is anger? Is anger good or bad?
- Is anger normal or an abnormal behaviour? How can anger harm you?
- Why is it important for entrepreneurs to manage their anger?

### Say

- Talk about anger and the importance of anger management in entrepreneurs as discussed in the Participant Handbook.
- Let us do a small activity. This is an individual activity.
- Think of the incidents and situations that angered you and hurt you.

### Do

- Instruct them to note down these situations under different categories (as given in the Activity).
- Give the class 3-5 minutes to think and note down their answers.
- At the end of 5 minutes, ask some participants to volunteer and present their answers.
- They can also share these situations with their fellow participants if they do not wish to share it with the entire class.

### Activity

- Do you remember any incident which has hurt
  - ♦ you physically
  - ♦ you mentally
  - ♦ your career
  - ♦ your relationships.

### Ask

- Do you ever get angry?
- What are the things that make you angry?
- Do you remember any incident where your anger management helped you in maintaining healthy relationship?
- Do you remember any incident where someone lost business/ friend/ relationship due to temper (anger)?

## Say

- There are a few strategies which can help in controlling your anger. Let's do an activity to understand the anger management process better.
- This is an individual activity.
- Think of the incidents/ situations which trigger your anger (the cause).
- Then think what happened as a result of your anger (the effect).
- You need to come up with some techniques to manage your anger.

## Do

- Give the class the anger triggers (the cause) as listed in the activity.
- Put down the activity format (Anger Triggers, Result of your Anger, Anger Management Techniques) on the board and instruct the class to write the answers under different categories.
- Give the class 3-5 minutes to think and note down their answers.
- At the end of 5 minutes, ask the participants who wish to volunteer and present their answers.

## Activity

Trigger points and Anger Management Techniques Activity

### Anger Triggers

List of triggers that make you angry:
Someone says you did something wrong.
You want something you can't have now.
You get caught doing something you shouldn't have been doing.
You are accused of doing something you didn't do.
You are told that you can't do something.
Someone doesn't agree with you.
Someone doesn't do what you tell him to do.
Someone unexpected happens that messes up your schedule.

### Result of your anger:

--

Write the techniques that you use to manage your anger:

### Anger Management Techniques

## Say

- Now, let's discuss the problems and solution with all.
- The individual will first briefly describe trigger points to the class.
- Then discuss the result of the anger. Other participants are requested to remain quiet while one is making the presentation.
- Post presentation, other participants may ask questions.

## Do

- Congratulate each individual for sharing their points.
- Ask the audience to applaud for them.
- Ask de-brief questions after the presentation to the class.
- Keep a check on the time. Ask the participants to wind up the activity quickly if they go beyond the given time limit.

## Ask

### De-brief questions:

- In the situation described by the presenter, who was at fault?
- How could you have handled this situation alternatively?

## Summarize

- Close the discussion by summarizing the strategies and tips of anger management for entrepreneurs.
- Ask the participants what have they learnt from this exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.

## Notes for Facilitation

- Encourage the participants to share information about them while presenting the situations to the class.
- Keep the format of the Activity prepared in a chart paper so that it can be displayed during the session.

## 11.1.8: Stress Management: What is stress?

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the causes of stress
- Discuss the symptoms of stress
- Discuss tips for stress management

### Resources to be Used

- Participant Handbook

### Ask

- You are waiting in the reception for an interview or a very important meeting, suddenly your legs are shaky, your hands are cold, you are feeling nervous. Have you ever been in this kind of situation?
- Have you had days when you had trouble sleeping?
- Have you ever been so worried about something that you ended up with a terrible headache?

### Say

- You've probably heard people say, "I'm really stressed out" or "This is making me totally stressed."

### Ask

- What do you understand by stress?
- What gives you stress?
- How do you feel when you are stressed or what are the symptoms of stress?
- How can stress harm you?
- Why is it important for entrepreneurs to manage stress?

### Say

- When we feel overloaded or unsure of our ability to deal with certain challenges, we feel stressed.
- Discuss about stress, causes of stress, and symptoms of stress as discussed in the Participant Handbook.
- Let's understand the causes of stress and how to deal with them with the help of some case scenarios.
- You will be given some cases.
- You have to analyse the case scenario and then find an appropriate solution to the problem.
- This will be a group activity.

### Do

- Divide the class into four groups of 5- 6 participants (depending on the batch size).
- Assign one case scenario to each group.
- Instruct them to read the case carefully.
- The group is expected to analyse and discuss the case amongst them and find a solution to the given problem.
- Explain their discussion should result in getting answers for the following questions:

- What was/ were the cause(s) of stress?
  - ♦ Was the stress avoidable or manageable under the given circumstances?
  - ♦ If yes, how do you think that the stress could be avoided (managed)?
  - ♦ If no, then why not?
- Give the class 10-12 minutes to discuss the case and note down their solutions.
- At the end of 12 minutes, the team should present their case solution to the larger group.
- Ask the group to select a group leader for their group.
- The group leader to discuss and assign roles to the group members for the presentation.

## Team Activity

### Case Study Analysis

#### Scenario 1

Akash's alarm doesn't go off and he gets late getting out of the house. He hits traffic and ends up 15 minutes late to work, which his boss notices. He gets to his desk and finds he has to complete 2 reports in next one hour. Just when he is about to begin work, a message pops up "Telecon with the client begins in 10 minutes. Please be in the conference room in 5 minutes."

He is not prepared for the call. He is stressed. He does not want to speak to his boss about this. He is stressed, feeling uncomfortable and sick. Not in a position to attend the call or finish the reports on time.

#### Scenario 2

While paying his overdue bills, Rahul realised that it's the middle of the month and he has only Rs 500 left in his account. He has already asked all of his friends, and family for loans, which he hasn't paid back yet. He is still contemplating over the issue when his phone rings. His sister's birthday is due next week and she has seen a beautiful dress which she wants to buy but cannot tell the parents as it is a bit expensive. She wishes if Rahul could buy the dress for her. Rahul has promised to buy her the dress for her birthday.

Rahul is stressed, does not understand what to do. He is unable to concentrate on his work and unable to complete the tasks assigned. His team leader has already warned him of the delay.

#### Scenario 3

Sheela calls the cable company as she has unknown charges on her bill. She has to go through the automated voice mail menu three times and still can't get through to a customer care executive. After 15 minutes of repeated efforts, her call is answered. She explains the entire issue to the customer care executive but before the person could suggest a way out, the call drops.

Now Sheela has to call back and repeat the whole process all over again with a new customer care executive. She is very angry and calls again but cannot connect this time.

She has to leave to office so she decides to call from office and check. When she connects this time she is angry and argues with the executive on the call. All her co-workers around are looking at her as her volume has suddenly increased. She bangs the phone and ends the call.

Her co-worker Neelam enquires what has happened to her. She ignores her and just walks off. She has become irritable and her behaviour and tone with other co-workers is not acceptable.

**Scenario 4**

Arpit is a young entrepreneur who started doing business through Facebook few weeks back. He had always been into a job. Although Arpit has very few financial liabilities, it wasn't an easy decision to leave a comfortable job at once and look for newer pastures. Arpit's boss warned him of the consequences and the challenges of starting a business when nobody ever in his family had been in business.

He has not been able to get a good deal till now. This is an important life shift for him which comes with unknown variables. Arpit is nervous and is wondering if he has what it takes to fulfill the requirement of his new role, or the new experiences he's likely to face.

**Ask** **De-brief questions:**

- What was/ were the cause(s) of stress?
- Was the stress avoidable or manageable under the given circumstances?
- If yes, how do you think that the stress could be avoided (managed)?
- If no, then why not?

**Say** 

- Now, let's discuss the problem and solution with the larger group.
- The group will first briefly describe the case to the class.
- Then discuss the issue identified and the proposed solution.
- Post presentation, the other groups may ask questions to the group that has presented.

**Do** 

- Congratulate each group for sharing their points.
- Ask the audience to applaud for them.
- Ask de-brief questions to cull out the information from each group.
- Keep a check on time. Tell participants to wind up the discussion quickly if they go beyond the given time limit.

**Say** 

- While it is common and normal to feel some tension. This feeling nervous and tensed can interfere with your thinking process and can have a negative impact on your performance.
- Stress can deplete the most vibrant of souls. It can have a negative effect on every aspect of a person's life including their health, emotional well-being, relationships, and career. However, one needs to understand the causes and types of stress before looking for ways to manage it.

**De-brief:****Scenario 1**

The cause of stress was lack of time management and the habit of procrastinating. If Akash would have managed his time well, planned alternate ways to get up on time, finished prior tasks on time and planned for client meetings in advance then he wouldn't have faced stress.

**Scenario 2**

The cause of stress was lack of financial planning. Rahul should have planned his financial resources well in advance and saved some money for the rainy day. Also, differentiating between needs and wants and keeping a check on non-essential expenditure would have saved Rahul from this situation.

**Scenario 3**

Sometimes, stress is caused due to external factors instead of internal ones. In this case, the stress was unavoidable because we have no control over this customer care system. Every time, you will get in touch with a new executive and will have to explain all over again. This might cause stress but despite being frustrated and angry there is little that we can do about it. All Sheela could do was to find ways to calm herself down through some breathing exercises and meditation, reading some good book or listening to music and then start afresh.

**Scenario 4**

A positive, major life change can be a source of good stress. Regardless of how good the change is, it can be stressful. Stress caused by a positive and major life change can be beneficial because it causes a person to step out of their comfort zone and learn new skills. Here, Arpit may become a successful entrepreneur or learn new ways to do things differently.

Now let us see this scenario, can I have a volunteer to read out this case to the class.

**Do**

- Ask one of the participant who can volunteer and read out this scenario to the class.

**Scenario 5**

Rakesh lives in Kathmandu with his wife and two beautiful daughters Sarah and Sanya. Nepal was hit by a massive earthquake and Rakesh's building collapsed during the earthquake. During evacuation, Rakesh realised that though his wife and Sarah were fine and suffered only minor bruises, Sanya was nowhere in the scene. Panic stricken, he started calling her name and searching her frantically. A little later, he heard a meek voice from beneath the debris. He quickly removed the rubble to find a huge bed. Rakesh was pretty sure that Sanya was trapped underneath. Though he was badly bruised, he gathered all his courage and with all his might, he lifted the several-ton bed to save Sanya's life. Everyone was relieved to see Sanya alive and also extremely surprised to see this father's ability to access superhuman strength.

- Ask the audience to applaud for the participant after the scenario is read completely.
- Discuss the scenario, ask de-brief questions:
  - ♦ What kind of stress was Rakesh undergoing in this case?
  - ♦ Was the stress avoidable or manageable under the given circumstances?
  - ♦ What was the result of the stress?

**Say****De-brief:**

- Not all stress is harmful; good stress is actually energizing. This was a case of lifesaving stress, or hero stress, which is an important example of good stress. You may have heard stories in which a person performs an impossible feat of physical strength in order to save their life or the life of someone they love. This type of stress causing a surge of adrenaline is good for us.



## Unit 11.2: Digital Literacy: A Recap

### Key Learning Outcomes



At the end of this unit, participants will be able to:

1. Identify the basic parts of a computer
2. Identify the basic parts of a keyboard
3. Recall basic computer terminology
4. Recall the functions of basic computer keys
5. Discuss the main applications of MS Office
6. Discuss the benefits of Microsoft Outlook
7. Identify different types of e-commerce
8. List the benefits of e-commerce for retailers and customers
9. Discuss Digital India campaign will help boost e-commerce in India
10. Describe how you will sell a product or service on an e-commerce platform

## 11.2.1: Computer and Internet Basics: Basic Parts of a Computer

### Unit Objectives

At the end of this unit, participants will be able to:

- Identify the basic parts of a computer
- Identify the basic parts of a keyboard
- Recall basic computer terminology
- Recall the functions of basic computer keys

### Resources to be Used

- Participant Handbook
- Computer Systems with the required applications

### Say

- Let's take a quick recap of the basic computer parts.
- Discuss 'Basic Parts of Computer' and 'Basic Parts of a Keyboard' with the class as given in the Participant Handbook.

### Explain

- Explain all the parts of the computer and the keyboard by demonstrating on the real system.

### Ask

- Do you know about internet?
- Have you ever used internet?
- Why do you think internet is useful?
- What was the last task you performed on internet?

### Say

- Let's look at some basic internet terms.
- Discuss 'Basic Internet Terms' with the participants as given in the Participant Handbook.

### Summarize

- Ask the participants what they have learnt from this exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the importance of computer and internet for entrepreneurs.

## Practical

- Conduct a practical session.
- Ask the participants to assemble in the computer lab.
- Give some hands on practice exercises.

## Do

- Group the participants for the activity depending on the batch size and the number of computer systems available in the lab.
- Explain the purpose and duration of the activity.
- Ensure the participants complete the practical exercises assigned.

## 11.2.2: MS Office and Email: About MS Office

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the main applications of MS Office
- Discuss the benefits of Microsoft Outlook

### Resources to be Used

- Participant Handbook
- Computer Systems with MS Office

### Ask

- What is the most frequent activity that you do on the computer?
- Do you know how to make presentations on the computer?

### Say

- Give a brief introduction of MS Office as given in the Participant Handbook.
- Discuss the most popular office products. Explain in brief their application, benefits and working.
- **Microsoft Word** is a word processing program that allows for the creation of documents. The program is equipped with templates for quick formatting. There are also features that allow you to add graphics, tables, etc.
- **Microsoft Excel** is a tool for accounting and managing large sets of data. It can also simplify analysing data. It is also used to create charts based from data, and perform complex calculations. A Cell is an individual data box which will have a corresponding Column and Row heading. This gives the cell a name, referred to as the Cell Reference. There can be multiple pages in each workbook. Each page, or sheet, is called a Worksheet. When you open a new Excel file, it automatically starts you with three worksheets, but you can add more.

### Explain

- Explain the working and frequently used features of Office on a real system.

### Ask

- What do you know about e-mails?
- Do you have an email id?
- How often do you check your e-mails?

### Say

- Communication is vital for every business. The fastest and the safest way to communicate these days are through emails. MS Outlook helps to manage your emails in a better way and also offers a host of other benefits.
- Discuss “Why Choose Microsoft Outlook?” with the participants as given in the Participant Handbook.

**Do** 

- Ask the participants to assemble in the computer lab.
- Explain the working of Outlook on a real system..

**Demonstrate** 

- Demonstrate how to create email id.
- Demonstrate how to write new mails, send mails.
- Demonstrate how to use MS Office application to create a letter and send it as attachment in an email.
- Demonstrate how to use other MS Office applications.

**Practical** 

- Give some hands on practice exercises
- Group the participants for the activity depending on the batch size and the number of computer systems available in the lab.
- Explain the purpose and duration of the activity.

**Summarize** 

- Ask the participants what they have learnt from this exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.

### 11.2.3: E-Commerce

#### Unit Objectives

At the end of this unit, participants will be able to:

- Identify different types of e-commerce
- List the benefits of e-commerce for retailers and customers
- Discuss Digital India campaign will help boost e-commerce in India
- Describe how you will sell a product or service on an e-commerce platform

#### Resources to be Used

- Computer System with internet connection
- Participant Handbook

#### Ask

- How many of you have done shopping online?
- Can you name at least five shopping websites?
- What is the product that you most frequently buy online?
- Why do you do shopping online instead of going to the market?

#### Say

- Give a brief introduction of “What is E-commerce”. Refer to the Participant Handbook.
- E-commerce emerged in the early 1990s, and its use has increased at a rapid rate. Today, many companies sell their products online. Everything from food, clothes, entertainment, furniture and many other items can be purchased online.

#### Ask

- What other types of transactions have you performed on the internet other than buying products?

#### Say

- Give examples of e-commerce activities from Participant Handbook.

#### Team Activity

##### E-commerce examples

- Instruct the participants to list some of the payment gateways that they have used for e-commerce activities.
- Give them 5 minutes to make this list.
- Discuss payment gateways and transaction through payment gateways.
- Conclude the discussion by mentioning how important e-commerce has become in our day to day transactions.

## Say

- E-commerce activities can be classified based on the types of participants in the transaction.
- Discuss “Types of E-commerce” from the Participant Handbook.

## Do

- Discuss all types of E-commerce by giving examples and names of some popular websites which use them.
- Make the discussion interactive by asking the class to share some popular e-commerce sites of each type.

## Say

- E-commerce activities bring a host of benefits for both, retailers and customers.
- Discuss benefits of E-commerce from the Participant Handbook.

## Explain

- The majority of the population that uses E-commerce activities lives in tier-1 and tier-2 cities. To encourage the use of digital money in tier-3 and 4 areas, PM Mr. Modi launched the “Digital India Campaign”.
- Discuss “Digital India Campaign” from the Participant Handbook.
- By Digital India project the government will deliver services via mobile connectivity and in doing so, is expected to bring the internet and broadband to remote corners of the country. This connectivity will in turn enhance e-commerce activities also. Furthermore, the Indian Government is also modernizing India Post and aims to develop it as a distribution channel for e-commerce related services.

## Say

- Now let us discuss how to sell a product using E-commerce.
- Every product has to be sold on a platform on the internet. Think of it as a shop that you have to sell your product. Now this shop can be your own or shared or rented. If the shop is your own or rented there will be only your products in that shop. If the shop is shared, there will be products of multiple sellers in that shop. A common example is a departmental store which has products from multiple brands in the shop.
- Similarly, in E-commerce the shop is the website where your products are displayed. If it is your own website it will exclusively showcase your products. In this case the cost that you will incur will be:
  - Developing the website
  - Hosting the website
  - Maintenance of the website
- If you rent a website it will also showcase your own products but the development, hosting and maintenance parts goes to the owner. This saves time and the cost to manage these activities.
- Smaller companies usually go for renting a website and the bigger ones develop their own website.
- The concept of shared platforms has become very popular in recent times. In this platform the sellers have to register and then they can sell their goods on a common platform. Among the most popular of these are Amazon, Myntra, Flipkart, etc.

## Role Play

- Tell the participants to choose a product or service that they want to sell online.
- Tell them to write a brief note explaining how they will use existing e-commerce platforms, or create a new e-commerce platform to sell their product or service.

## Ask

- How much money are you carrying in your wallet?
- Do you have a credit/debit card?
- How do you make payments while doing online shopping?

## Say

- Demonetization has made carrying cash in the wallet very difficult. People either shop through cards or some other form of digital money.
- So what do you think is digital money?
- In this form the money is both paid and received digitally. There is no hard cash involved. It is an instant and convenient way to make payments.
- There are various types of digital payments. Let us discuss some of them in brief here.
- The first one is the most commonly used system i.e. the cards. Debit card, credit card, prepaid card, all fall under this category.
- Then is the e-wallet or the mobile wallet. This has become the most used form of digital money after demonetization. Examples are Paytm, state bank buddy, Freecharge, etc.
- Many other forms of digital money are also coming up in market like mobile apps, Aadhar card based payment, etc.

## Do

- Demonstrate how to make and receive payments through digital models like Paytm and state bank buddy.

## Ask

- Why do you think people have started using digital money instead of hard cash? Is demonetization the only reason?

## Say

- Digital money gives a lot of advantages over the conventional hard cash. Some of them are:
  - ♦ Digital payments are easy and convenient. You do not need to take loads of cash with you, a mobile phone or a card will suffice.
  - ♦ With digital payment modes, you can pay from anywhere anytime.
  - ♦ Digital payments have less risk.

## Summarize

- Ask the participants what they have learnt from this exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the importance of e-commerce and digital money.

## Unit 11.3: Money Matters

### Key Learning Outcomes



At the end of this unit, participants will be able to:

1. Discuss the importance of saving money
2. Discuss the benefits of saving money
3. Discuss the main types of bank accounts
4. Describe the process of opening a bank account
5. Differentiate between fixed and variable costs
6. Describe the main types of investment options
7. Describe the different types of insurance products
8. Describe the different types of taxes
9. Discuss the uses of online banking
10. Discuss the main types of electronic funds transfer

## 11.3.1: Personal Finance – Why to Save?

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the importance of saving money
- Discuss the benefits of saving money

### Resources to be Used

- Participant Handbook

### Ask

- How many of you save money?
- Why do you feel the need to save it?
- Do you plan your savings?
- Where do you keep the money you save?
- How do you use the money that you have saved?

### Example

- Let's look at these two examples:

#### Example 1:

Suhani works in a good company and earns Rs.30,000 month. She always saves 5000 per month and keeps it aside as a personal saving. She keeps the money at home and has saved quite a lot. One day her mother has a medical emergency and has to be taken to the hospital. Her family is worried about the amount they have to spend for the treatment. It will cost them atleast 40,000.

Suhani says tells her family not to worry and that she has about 50,000, which she has saved over the months.

#### Example 2:

Jasmeet works in the same company and earns the same as Suhani. She is very fond of shopping and spends most of her money on buying new clothes. At the end of the month, she is always asking her father for money as her pay is finished.

### Ask

- Who do you identify with –Suhani or Jasmeet ?
- How do you think Suhani manages to save money which Jasmeet is unable to do?

### Say

- We should always set aside some and save some money from our monthly pay. The future is unpredictable. Saving money not only gives you a sense of financial security but it can be used in case of emergencies.
- Discuss “Importance of Saving” with the participants as given in the Participant Handbook.

### Ask

- What are the benefits of saving money?
- What does being financially independent mean to you?

## Say

- Discuss “Benefits of Saving” with the participants as given in the Participant Handbook.
- Now let us continue with Suhani's story. Suhani has told her family not to worry and that she has about 50,000, which she has saved over the months. The family is happy about Suhani's decision of saving money, which will be of great help for them now.

Suhani is going to the hospital today to pay the first instalment for the treatment. Suddenly finds only 35,000 in her cash box when she counts and does not remember using it. She has not kept any record and now she is upset.

## Ask

- Was it a good decision by Suhani to save a part of her earnings every month?
- Was it a wise decision to keep all her savings as cash in a cash box?
- Could she have managed to save money in a better and more effective manner?
- Do you want to learn how to save money and use it effectively?

## Say

- Let's learn personal saving with the help of a group activity.

## Team Activity

### Personal Finance- Why to save

- This activity has two parts:

#### PART 1

#### WAYS TO SAVE MONEY

- You are earning 30,000/- per month. You have recently changed your job and have to move to a metropolitan city. You are now living as a paying guest paying 10,000/- per month. Your other estimated expenditures like travel, food, recreation would be around Rs. 17, 000 per month.
- Make a list of different ways to save money.

#### PART 2

#### HOW WILL YOU USE THE MONEY

- After a year how much have you been able to save?
- How will you use the money that you have saved?

## Do

- Divide the class into groups of four.
- Instruct the participants to think and prepare a list of the various ways they can save money.
- Give the participants 10 minutes to prepare the list.
- Once done, instruct them to think of how they could use the money they have saved.
- Give the participants 10 minutes to prepare the list.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

### Activity De-brief

- What were the different ways you could save money?
- How much money were you able to save?
- How will you use the money you have saved in one year?

## Say

- Discuss the importance of personal finance and why it is important to save money.

## Summarize

**You can summarize the session by discussing:**

- The importance of saving money.
- Ways to save money.
- How the money saved can be used for different purposes.

## 11.3.2: Types of Bank Accounts, Opening a Bank Account

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the main types of bank accounts
- Describe the process of opening a bank account

### Resources to be Used

- Account opening sample forms
- Participant Handbook

### Ask

- How many of you save money?
- Where do you keep the money you save?
- How many of you have a bank account?
- What type of account do you have?

### Example

- Let's look at the given example:

Reena is in the third year of college but in the evening she gives tuitions for children living in her colony. She earns 15,000/- per month. As her students stay in different parts of the city, she has to walk a lot.

To save time, she decides to buy a second hand scooter for herself. But she has to save money for it. Her class mate advises her to open a recurring deposit account in the bank.

She goes to the bank close to her home. The personal manager gives her some forms to fill. She is confused as she has never done this before. Her elder sister has an account in the same bank. She asks for help from her sister. She goes to the bank the next day with her sister. The personal banker gives her a list of documents that she will need to submit with the form for opening an account. The banker advises her to open a 6 months recurring deposit.

### Ask

- Do you try to save money monthly but have to spend it on unforeseen expenditure?
- Have you ever thought of depositing your savings in a bank?

### Say

- Before opening a bank account, you need to know the types of accounts we have in India.
- Discuss "Types of Bank Accounts" with the participants as given in the Participant Handbook.

### Ask

- Can someone say what are the different types of bank accounts?

## Say

- Let's learn about the different types of bank accounts through an activity.

## Team Activity

- Divide the class in four groups.
- Label the groups as savings account, current account, recurring account and fixed deposit.
- On a chart paper, ask them to write the key points of their account.

### Activity De-brief

- Ask each group to present the key points of their account.

## Say

- Now that you know about the four different types of accounts, let's learn how to open a bank account.
- Discuss "Opening a Bank Account" with the participants as given in the Participant Handbook.
- Discuss "Tips" that the participants should keep in mind while opening a bank account as given in the Participant Handbook.

## Ask

- What are the main documents required for opening a bank account?
- What are some important points to ask the bank personnel while opening an account?

## Say

- Mention officially valid KYC documents (refer to the Participant Handbook)
- Now, let's understand the procedure of opening a bank account through an activity.

## Team Activity

### Opening a Bank Account

- This activity is done in groups.
- Divide the class in groups of four or six.

#### PART 1

#### FILLING A BANK ACCOUNT OPENING FORM

- You have to fill a bank opening form.
- You can refer to the section "Opening a Bank Account" of your Handbook for reference.
- List all the steps that you will be required to fill in the form.
- List the documents that you needs for filling the form.
- Now fill in the form.

### Activity De-brief

#### How did you design the form?

- What all details did you fill in the form?
- What were your KYC documents?
- How would this activity help you in future?

## Do

- Instruct the participants to read the section "Opening a Bank Account" of the Participant Handbook.
- Give each group one sample account opening form.
- Give the participants 5 minutes to read the form.
- Give them 15 minutes to fill it.
- Assist them by explaining each category and how to fill it.
- Keep a check on time.
- Tell the group to wind up quickly if they go beyond the given time limit.

## Summarize

### Note:

- You can summarize the unit through a role play.
  - ♦ A person wanting to open an account in the bank.
  - ♦ What is the procedure that he will go through?
  - ♦ Discuss the key points of different types of bank accounts.
  - ♦ How to select the type of account
  - ♦ How to fill the account opening form.
- A sample account opening form is given in the following page for reference. Use it for the activity in the class.

### Sample Bank Account Opening form.

<b>Photograph</b>	XXX Bank		
SAVING BANK ACCOUNT OPENING FORM			
Account No.: _____		Date: _____	
Name of the Branch			
Village/Town			
Sub District / Block Name			
District			
State			
SSA Code / Ward No.			
Village Code / Town Code		Name of Village / Town	
<b>Applicant Details:</b>			
Full Name	Mr./Mrs./Ms.	First	Middle Last Name
Marital Status			
Name of Spouse/Father			
Name of Mother			
Address			
Pin Code			
Tel No. Mobile			Date of Birth
Aadhaar No.			Pan No.
MNREGA Job Card No.			
Occupation/Profession			
Annual Income			
No. of Dependents			

<b>Detail of Assets</b>	Owning House : Y/N	Owning Farm :
	Y/N	
	No. of Animals :	Any other :
<b>Existing Bank A/c. of family members / household</b>	Y / N	If yes, No. of A/cs. _____
<b>Kisan Credit Card</b>	Whether Eligible Y / N	
I request you to issue me a <b>Rupay Card</b> .		
I also understand that I am eligible for an Overdraft after satisfactory operation of my account after 6 months of opening my account for meeting my emergency/ family needs subject to the condition that only one member from the household will be eligible for overdraft facility. I shall abide by the terms and conditions stipulated by the Bank in this regard.		

**Declaration:**

I hereby apply for opening of a Bank Account. I declare that the information provided by me in this application form is true and correct. The terms and conditions applicable have been read over and explained to me and have understood the same. I shall abide by all the terms and conditions as may be in force from time to time. I declare that I have not availed any Overdraft or Credit facility from any other bank.

**Place:****Date:****Signature / LTI of Applicant****Nomination:**

I want to nominate as under				
Name of Nominee	Relationship	Age	Date of Birth in case of minor	Person authorised in case to receive the amount of deposit on behalf of the nominee in the event of my /minor(s) death.

**Place:****Date:****Signature / LTI of Applicant****Witness(es)\***

1. \_\_\_\_\_

2. \_\_\_\_\_

\*Witness is requires only for thumb impression and not for signature

### 11.3.3: Costs: Fixed vs. Variables: What are Fixed and Variable Costs?

#### Unit Objectives

At the end of this unit, participants will be able to:

- Differentiate between fixed and variable costs

#### Resources to be Used

- Participant Handbook
- Blank sheets of paper
- Pens

#### Ask

- What is cost?
- Will a telephone bill fall under the category of a fixed or variable cost?

#### Say

- Discuss: Fixed and Variable cost with examples. Let us do a small activity.

#### Team Activity

##### Identify the type of cost

1. Rent
2. Telephone bill
3. Electricity bill
4. Machinery
5. Insurance
6. Office supplies/ Raw materials
7. Employee salaries
8. Commission percentage given to sales person for every unit sold
9. Credit card fees
10. Vendor bills

#### Do

- Divide the class into two groups. Read out the list of costs given in the activity.
- Read out each item from the cost list and ask the groups in turns to identify whether it is a fixed or variable cost.

## Summarize

- Note: You can summarize the unit either by having a role play between a consultant and a budding entrepreneur explaining the differences between fixed and variable costs or by discussing the key points of the unit.

## Notes for Facilitation

- Answers for the activity - Identify the type of cost

1. Rent	(Fixed)
2. Telephone bill	(Fixed)
3. Electricity bill	(Fixed)
4. Machinery	(Fixed)
5. Insurance	(Fixed)
6. Office supplies/ Raw materials	(Variable)
7. Employee salaries	(Fixed)
8. Commission percentage given to sales person for every unit sold	(Variable)
9. Credit card fees	(Variable)
10. Vendor bills	(Variable)

## 11.3.4: Investments, Insurance and Taxes

### Unit Objectives

At the end of this unit, participants will be able to:

- Describe the main types of investment options
- Describe the different types of insurance products
- Describe the different types of taxes

### Resources to be Used

- Participant Handbook

### Ask

- Ask the participants- “What do you see first thing in when you get your mobile bill? Apart from the amount and due date do you have a look at the taxes you are being billed for?”
- Why do you think people get their cars insured or have a medical insurance?
- You have saved money and want to invest it, how would you decide what is the best investment for your money?

### Example

- Let's have a look at a few scenarios.

Ranbir has sold his house and deposited the money in his bank. His Chartered Accountant tells him that he will have to re-invest the money otherwise he will have to pay capital tax. What is capital tax and how is it different from income tax?

Jasmeet and Anup are blessed with a baby girl. They decide to have an insurance policy that will mature when their daughter is ready to higher education.

Shivani is working in a corporate office and getting good pay. She will have to pay income tax so she decides to invest her money in tax saving schemes. She goes to the bank manager to discuss the best products in which she can invest.

### Say

- Discuss the Investment, Insurance and Taxes as given in the Participant Handbook.

### Ask

- How do investments, insurances and taxes differ from each other?

### Say

- Let's learn the differences between the three by having an activity.

### Say

- We will have a quiz today.

## Team Activity

- The activity is a quiz.

## Do

- Divide the class into groups of three and give a name to each group
- Explain the rules of the quiz. For each correct answer the group gets 1 mark. If the group is unable to answer the question is rolled over to the next group.
- Explain the purpose and duration of the activity.
- On the blackboard write the names of the groups.
- Ask the questions of the quiz.
- Keep a score for the groups.
- Set guidelines pertaining to discipline and expected tasks.

## Summarize

- Summarize the unit by discussing the key points and answering question

## Notes for Facilitation

### Questions for the quiz

1. What are bonds?  
*Bonds are instruments used by public and private companies to raise large sums of money.*
2. Who issues the bonds?  
*Private and public companies issue the bonds.*
3. Why are bonds issued?  
*To raise large amount of money as it cannot be borrowed from the bank.*
4. Who is the buyer of stocks and equities?  
*The general public is the buyer.*
5. What types of scheme is the Sukanya Samridhi Scheme?  
*Small Saving Scheme*
6. What is the difference between mutual and hedge funds?  
*Mutual funds are professionally managed financial instruments that invest the money in different securities on behalf of investors. Hedge funds invest in both financial derivatives and/or publicly traded securities.*
7. Why is a loan taken from the bank to purchase real estate?  
*To lease or sell to make profit on appreciated property price.*
8. Name the two types of insurances?  
*Life Insurance and Non-life or general insurance*
9. Which insurance product offers financial protection for 15-20 years?  
*Term Insurance*
10. What is the benefit of taking an endowment policy?  
*It offers the dual benefit of investment and insurance.*
11. Mr. Das gets monthly return on one of his insurance policies. Name the policy?  
*Money Back Life Insurance*

12. What are the two benefits of a Whole Life Insurance?

*It offers the dual benefit of investment and insurance*

13. Which policy covers loss or damage of goods during transit?

*Marine Insurance*

14. After what duration is the income tax levied?

*One financial year*

15. What is long term capital gain tax?

*It is the tax payable for investments held for more than 36 months.*

16. Name the tax that is added while buying shares?

*Securities Transaction Tax*

17. What is the source of corporate tax?

*The revenue earned by a company.*

18. Name the tax whose amount is decided by the state?

*VAT or Value Added Tax*

19. You have bought a T.V. What tax will you pay?

*Sales Tax*

20. What is the difference between custom duty and OCTROI?

*Custom duty is the charges payable when importing or purchasing goods from another country. OCTROI is levied on goods that cross borders within India.*

### 11.3.5: Online Banking, NEFT, RTGS, etc.

#### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the uses of online banking
- Discuss the main types of electronic funds transfer

#### Resources to be Used

- Participant Handbook
- Computer System with internet connection
- Debit card

#### Ask

- When was the last time you visited a bank?
- How do you pay your bill for electricity and telephone?
- Have you ever tried to transfer money from one bank account to another bank account using the online banking facility?

#### Say

- Most of us lead a busy life. Time has become more important than money. In this busy schedule no one has time to stand in bank queues. That's where Online Banking comes in. Online banking or internet banking means accessing your bank account and carrying out financial transactions through the internet.
- Discuss "What is online banking?" from the Participant Handbook.
- There are various advantages of online banking:
  - ♦ It saves time, as you need to visit the branch. .
  - ♦ You can conduct your banking transactions safely and securely without leaving the comfort of your home.
  - ♦ Online Banking also gives you round the clock access.
  - ♦ Online Banking makes it possible for you to pay your bills electronically.

#### Do

- Show them how they can use the internet banking.
- Use the computer system and show the demo videos on how to use internet banking provided on most banking sites. the computer system.
- Tell the class the various features of online banking:
  - ♦ Through their website set-up your online account.
  - ♦ Choose a secure username and password.
  - ♦ Set-up your contact information.
  - ♦ Once your information is verified, you are good to go.
  - ♦ Once you enter the portal explore all the features and learn your way through the portal.
- Discuss about maintaining the security of the online account.



## Unit 11.4: Preparing for Employment & Self Employment

### Key Learning Outcomes

At the end of this unit, participants will be able to:

1. Discuss the steps to follow to prepare for an interview
2. Discuss the steps to create an effective Resume
3. Discuss the most frequently asked interview questions
4. Discuss how to answer the most frequently asked interview questions
5. Identify basic workplace terminology

## 11.4.1: Interview Preparation: How to Prepare for an Interview?

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the steps to follow to prepare for an interview

### Resources to be Used

- Participant Handbook

### Ask

- Have you ever attended an interview?
- How did you prepare before going for an interview?

### Say

- An interview is a conversation between two or more people (the interviewer(s) and interviewee) where questions are asked by the interviewer to obtain information from the interviewee.
- It provides the employer with an opportunity to gather sufficient information about a candidate and help them select the ideal candidate.
- It also provides the interviewee with an opportunity to present their true potential to the employer, build confidence and help make a decision about the job by asking questions regarding designation, salary, perks, benefits, promotions, transfers, etc.
- Let's do an activity to understand how to prepare for interviews better.

### Activity 1

- Introducing Yourself

### Do

- Select a participant and ask him/her to answer the following questions: “What can you tell me about yourself?”
- Give the participant at least one minute to speak.
- Once he/she is done, ask the rest of the participant what they gathered about the participant who was providing information.
- Now repeat the exercise with five other participants.

### Ask

- What information you should include when you are describing or introducing yourself in an interview?
- What information you should not include when you are describing or introducing yourself in an interview?

## Say

- Tell the participants that when an interviewer asks you to say something about yourself, he/she is not asking you to present your life history.
- Introduction should be short and crisp, and should present you in a positive light. It should include the following points:
  - ♦ Any work experience that you might have
  - ♦ A brief summary of your educational qualifications
  - ♦ Your strengths and achievements
  - ♦ Any special projects that you might have been part of
- The following topics should be avoided during an introduction:
  - ♦ Detailed description of your family (unless you are specifically asked to do so)
  - ♦ Too much information about your weaknesses
  - ♦ Information that is not true

## Do

- Congratulate each participant for sharing their points.
- Ask the audience to applaud for them.
- Ask de-brief questions to cull out the information from each group.
- Keep a check on time.

## Activity 2

- Planning the right attire

## Do

- Describe 2 individuals to the participants. One is wearing a casual t-shirt, jeans, and slippers. He has not combed his hair and neither has he trimmed or shaved his beard. The other individual is dressed formally with a shirt and pant, and is well-groomed. He has also worn formal shoes and a belt. Ask the participants which person would they prefer to hire in their organization and why?

## Summarize

- Close the discussion by discussing 'how to prepare for an interview' as discussed in the Participant Handbook.
- You can add the following points to it:
  - ♦ Tell the participants to create a positive and good impression in an interview. It is important for them to prepare for an interview beforehand.
  - ♦ The interviewer analyses not only your technical knowledge in relation to the job, but also whether or not you are a fit for the organization.
  - ♦ Every employer looks at the whole package and not just one or two things in isolation. Therefore, the way you dress and the way you present yourself is also important along with your skills and talents.
  - ♦ The participants will get only one chance to create a good first impression.

## 11.4.2: Preparing an Effective Resume: How to Create an Effective R

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the steps to create an effective Resume

### Resources to be Used

- Participant Handbook
- Blank papers
- Pens

### Ask

- When preparing for an interview, what are the most important things that you need to do?
- What documents do you carry with you, when you go for an interview?
- What is a resume?
- Why do you need a resume?

### Say

- Resume is not just a sheet of paper with your qualifications printed on it.
- It is a selling tool that will help the employer to see how and what you can contribute for company.
- Talk about the steps involved in creating an effective/attractive resumes discussed in the Participant Handbook.
- Now let's prepare a resume to understand the process in a better way.

### Do

- This is an individual activity.
- Give the details of the activity.
- Instruct them to read the activity carefully.
- The participant is expected to make an attractive resume based on the information provided.
- Give the class 25-30 minutes to study the case and create a resume.
- At the end of 30 minutes, the participants should exchange the resume with the person sitting next to him or her.
- Every participant will evaluate the resume prepared with their fellow participants.

### Say

- Do you think the candidate should apply for the job posting described in the advertisement?
- We have already discussed the steps involved in creating an effective/attractive resumes.
- Now let's prepare a resume for the candidate details given in the activity.

## Activity

### Case Study Analysis

- In the first section of the activity, you are being given the information about a candidate who is applying for a particular job.
- In the second section, you are being given the detailed description of the job posting. Create a resume for the candidate to apply for the job posting.
- Use the information that has been provided about the candidate to create this resume.

### Candidate Details

Nipesh Singla was born on 20th April, 1988 in Chandigarh, India. He currently resides at 1XX7, Sector XX D, Chandigarh –160018. His mobile number is 988XXXXX01, and e-mail address is nxxxxxxxla@gmail.com. Nipesh attended middle and senior school at Government Boys Senior Secondary School, Sector 15, Chandigarh. He has been a very talented boy since school. He was fond of painting and watching old Hindi movies. As part of a school charity program, he volunteered at the children's hospital during his senior years.

In July 2007, he joined Westwood School of Hotel Management, Zirakpur to pursue a diploma course in Hotel Management and Catering. After completing this course, he joined XYZ Group of Hotels as a Housekeeping intern in June 2010 for six months. In this role, he was responsible for cleanliness and maintenance of one floor in the hotel. Taking advantage of his strong interpersonal skills, he also got opportunities to make housekeeping arrangements for corporate meetings. While pursuing education, he gained working knowledge of Microsoft Word, Excel, Access and PowerPoint.

Nipesh is detail-oriented, flexible and adaptable. He has successfully worked with a diverse work force. He gelled well with his peers, both in college and during his internship. After completing the internship, his objective has been to find a job opportunity where he can use his skills and experience. Backed by experience, he is confident about his skills as housekeeping assistant.

### Job Posting

\* Do you see yourself as a HOUSEKEEPING SUPERVISOR?

What's your passion? Whether you're into cricket, reading or hiking, at IHG we are interested in YOU. At IHG, we employ people who apply the same amount of care and passion to their jobs as they do in their hobbies - people who put our guests at the heart of everything they do. And we're looking for more people like this to join our friendly and professional team.

THE LOCATION:

At the moment, we are looking for HOUSEKEEPING SUPERVISOR to join our youthful and dynamic team at Holiday Inn Amritsar, Ranjit Avenue in Amritsar, Punjab (India). Holiday Inn Amritsar is ideally located in Amritsar's commercial district on Ranjit Avenue with the world famous Golden Temple located only a short distance away. Sparkling chandeliers mark an incomparable arrival experience as you escape to the welcoming environment that is, Holiday Inn Amritsar. The fresh international brand to celebrate and explore Amritsar.

*Salary:* Negotiable

*Industry:* Travel / Hotels / Restaurants / Airlines / Railways

*Functional Area:* Hotels, Restaurants

*Role Category:* Housekeeping

*Role:* Housekeeping Executive/Assistant.

*Desired Candidate Profile*

Friendly, pleasant personality, Service - oriented.

You should ideally be Graduate/ Diploma holder in HM and at least 2 years of experience as a supervisor in good brand with good communication skills, English is a must.

In return we'll give you a competitive financial and benefits package. Hotel discounts worldwide are available as well as access to wide variety of discount schemes and the chance to work with a great team of people. Most importantly, we'll give you the room to be yourself.

\*Please get in touch and tell us how you could bring your individual skills to IHG.

Education-

*UG:* Any Graduate/ Diploma holder

*PG:* Post Graduation Not Required

## Say

- Now, let's share the resume with the fellow participant sitting next to you and evaluate each other's effort.

## Do

- Congratulate each participant for making their first attempt towards creating an effective resume.
- As a follow up activity, you can suggest them to prepare their own resume and show it to you the next day.

## Summarize

- Close the discussion by showing some effective resume samples to the candidates.
- Ask the participants what they have learnt from this activity.
- Ask if they have any questions related to what they have talked about so far.

## Notes for Facilitation

- Keep printed copies of the activity ready for the session.
- Put down the suggested format of the resume on the board while explaining the steps in preparing a resume.
- Do check the participants' resume and suggest necessary changes.
- Suggested example for the case presented:

Nipesh Singla

#1XX7, Sector XX-D

Chandigarh-160018

Mobile No: 91-988XXXXX01

E-mail: nxxxxxxxxla@gmail.com

**Objective:** Seeking an opportunity to use my interpersonal skills and experience to contribute to your company's growth, profitability and objectives.

### Professional strengths:

- Proficient in housekeeping
- Experienced in and capable of working with a diverse work force
- Team player and friendly in nature
- Successful working in a multi-cultural environment

- Detail oriented, flexible, and adaptable
- Knowledge of Microsoft Word, Excel, Access and PowerPoint

**Educational background:**

- Diploma in Hotel Management and Catering, Westwood School of Hotel Management, Zirakpur
- High School, Government Boys Senior Secondary School, Sector 15, Chandigarh

**Professional internships:**

- Housekeeping Intern, XYZ Group of Hotels, New Delhi (June 2010 – August 2010)
  - ♦ Responsible for cleanliness and maintenance of one floor in the hotel.
  - ♦ Got opportunities to make housekeeping arrangements for corporate meetings.

**Volunteer Work:**

- Student volunteer at children's hospital in Chandigarh.

Nipesh Singla

### 11.4.3: Interview FAQs

#### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the most frequently asked interview questions
- Discuss how to answer the most frequently asked interview questions

#### Resources to be Used

- Participant Handbook

#### Say

- Tell the participants you will provide them with interview situation and questions and they have to try to answer them.
- Tell them you will also explain the different ways to approach these questions.

#### Do

- Divide the class in pairs and ask the participants to perform a role play.
- One partner will play the role of the interviewer while the other will play the role of the interviewee.
- Tell them the interviewer can start the interview by asking the interviewee to introduce himself/herself.
- Call all the pairs one by one in front of the class to enact the role play.
- Follow the same pattern for all other situations.
- Time allotted for each situation is 8-10 minutes.
- Congratulate each participant for giving their input.
- Ask the class to applaud each time a team has completed their role play.
- Keep a check on time.

#### Role Play

Conduct a role play for the situation given.

##### Situation 1

- The interviewer will start by asking the interviewee a few generic questions such as:
  - What is your name?
  - Tell me something about yourself?
  - Can you tell me something about your family?
- Then, the interviewer will bluntly ask the following questions:
  - How do you explain this huge time gap in your resume?
  - What is the reason for this?
  - Weren't you looking for a job or is it that no one selected you?

## Say

### De-brief:

- When you put information on your resume, you should be prepared to answer any questions about it.
- Be present and focused on the questions being asked to you.
- One way of tackling the blunt questions is to tell the interviewer you did not come across an opportunity where you were sufficiently satisfied with both the remuneration offered as well as the profile. Therefore, you waited for the right opportunity to come along while looking for an ideal job.

## Role Play

Conduct a role play for the situation given.

### Role Play – Situation 2

- The interviewer will start by asking the interviewee a few generic questions such as:
  - ♦ What is your name?
  - ♦ Tell me something about yourself?
  - ♦ Can you tell me something about your family?
- Then, at the end of the interview, ask the interviewee:
  - ♦ There are over 200 people who have applied for this job, some with excellent work experience. Why should I hire you?

## Say

### De-brief:

- There is nothing wrong with stating your strengths and achievements. However, do not come across as arrogant or too boastful.
- You need show the interviewee that you have unique skills or talents to contribute to the company. The interviewer needs to know how you stand apart from the rest of the crowd.
- Tell the interviewer you are looking forward to working with the company and that you are a hard-working individual.

## Role Play

Conduct a role play for the situation given.

### Role Play – Situation 3

- The interviewer will start by asking the interviewee a few generic questions such as:
  - ♦ What is your name?
  - ♦ Tell me something about yourself?
  - ♦ Can you tell me something about your family?
- Then, lean forward, clasp your hands on the table and in a soft voice ask the interviewee:
  - ♦ Did you ever experience any neglect or disregard from your previous office? In other words, did you ever suffer because your office or team displayed favouritism?

## Say

### De-brief:

- Keep this in mind: Do not criticize anyone during an interview.
- You are free to express your opinion, however, your language, answers, body language, and the tone of your voice should remain constructive and neutral.
- Since criticism will show you in negative light, you should keep your answers honest yet diplomatic.
- You can tackle such questions by saying, “I got along well with most of my faculty and peers.”

## Role Play

Conduct a role play for the situation given.

### Role Play – Situation 4

- The interviewer will start by asking the interviewee a few generic questions such as:
  - ♦ What is your name?
  - ♦ Tell me something about yourself?
  - ♦ Can you tell me something about your family?
- Then very bluntly ask the interviewee:
  - ♦ How long do you plan to stay with this company if you are selected?
- After the candidate responds, ask sarcastically:
  - ♦ Do you seriously mean that?

## Say

### De-brief:

- Don't provide unreal and idealistic answers.
- Your answers should be honest yet diplomatic. In a situation like this, the interviewer does not expect you to provide a specific timeline.
- You can say something like, “I would like to stay with the company as long as I can contribute constructively and develop as an employee, within the organization, professionally and financially.”

## Role Play

Conduct a role play for the situation given.

### Role Play – Situation 5

- The interviewer will start by asking the interviewee a few generic questions such as:
  - ♦ What is your name?
  - ♦ Tell me something about yourself?
  - ♦ Can you tell me something about your family?
- Ask him/her how important he/she thinks it is to be punctual in the corporate world.
- After he/she answers, look up sternly at the interviewee and in a crisp voice, say:
  - ♦ You were late for this interview by 10 minutes. That surely does not seem to be in line with what you just said?

## Say

### De-brief:

- Politely apologize for being late.
- You can add something such as, “I assure you this is not a habit”. All your future actions should be in line with this statement.
- Avoid giving any excuses.
- You might feel obligated to provide a justification for your tardiness, but the interviewer is not interested in that.
- Do not over apologize. Once this response is out of the way, turn your focus back to the interview.

## Role Play

Conduct a role play for the situation given.

### Role Play – Situation 6

- The interviewer will start by asking the interviewee a few generic questions such as:
  - ♦ What is your name?
  - ♦ Tell me something about yourself?
  - ♦ Can you tell me something about your family?
- After asking a few academic or job-related questions, ask the interviewee:
  - ♦ If you get this job, what salary package do you expect us to give you?

## Say

### De-brief:

- If there is no way for you to avoid this question, respond to the interviewer by providing a reasonable and well-thought out salary range.

## Role Play

Conduct a role play for the situation given.

### Role Play – Situation 7

- The interviewer will start by asking the interviewee a few generic questions such as:
  - ♦ What is your name?
  - ♦ Tell me something about yourself?
  - ♦ Can you tell me something about your family?
- Then, bringing the interview to a close, ask the interviewee:
  - ♦ Do you have any questions for me?

## Say

### De-brief:

- Ask relevant questions.
- Don't bombard the interviewer with questions.
- If you have questions about the result of the interview, you can limit your questions to 1 or 2. Keep them short and relevant like:
  - ♦ When will I be informed about the results of the interview?
  - ♦ What are the working hours?
  - ♦ Will the job require me to travel?

## Explain

- Tell the participants to be prepared for answering different types of questions in an interview.
- Stay calm and focused, and take a moment to think about how you should respond. Always maintain a confident tone.
- Even if you don't intend to, your body language conveys your level of discomfort with a particular question. Try to keep your actions, tone, and gestures neutral.
- Maintain your composure while answering personal question.

## Do

- Tell all the participants to form pairs again.
- Tell them to use the following list of frequently asked interview questions to conduct mock interviews.
- They will use all or some of these questions to conduct mock interviews with their partners.
- One partner will play the role of the interviewer while the other will play the role of the interviewee.
- After they are through asking and answering the questions, the roles will be reversed.
- The same list of questions will be used again.
- After each mock interview ask the interviewer to provide feedback and clear any doubts that may arise.
- Time allotted for each situation is 30-35 minutes.

## Activity

### Mock Interview Questions

Mock Interview Questions
Tell me something about your family.
What qualities would you look for in a Manager or a Supervisor?
Why did you apply for this job?
What do you know about this company?
How do you deal with criticism?
How do you plan to strike a good work-life balance?
Where do you see yourself five years from now?
Have you applied for jobs in other companies?
What kind of salary do you expect from this job?
Do you have any questions for me?

## Summarize

- Close the discussion by discussing the questions in the both activities.
- Ask the participants what they have learned from this activity.
- Ask if they have any questions related to what they have talked about so far.

## 11.4.4: Work Readiness – Terms and Terminology

### Unit Objectives

At the end of this unit, participants will be able to:

- Identify basic workplace terminology

### Resources to be Used

- Participant Handbook
- Chart papers
- Blank sheets of paper
- Pens

### Ask

- What do you understand by workplace terminology?
- Are offer letter and contract of employment the same?

### Say

- Let's start this unit with an activity.

### Team Activity

#### Workplace terminology

- This is a group activity conducted in three parts.

#### Part 1

Sheila received a call from the recruiter of MND Company. Before she is recruited by the company, think of the recruitment process she will have to go through. Start from the telephone call to signing her letter of acceptance. Write down all the words that come to your mind.

#### Activity De-brief

- Have the participants read out the words they have written
- Encourage all the participants to participate in the activity

### Do

- Divide the class into small groups of 4 or 6.
- Instruct the participants that they will be doing a brainstorming activity.
- Give them one chart paper each. Tell them to divide the chart in two parts.
- Instruct them that they have to use one half of the chart paper now. The other half will be used later.
- The participants have to write all the words that come to their mind related to the recruitment process.
- Give them 10 minutes to do the activity.
- Tell them that there are no right or wrong answers.
- Keep a track of the time.

**Say** 

- You all know quite a few words related to the terms used in the office.
- Let us talk about some new terms that have been missed out.
- Discuss “Work Readiness – Terms and Terminology” with the participants as given in the Participant Handbook.

**Ask** 

- Why is it important to know the workplace terms?
- How do they help?
- Can the words be categorised further?

**Say** 

- Let's now continue the activity.

**Team Activity** **Terms and Terminology**

- This is again a group activity. The members of the group remain the same as in Activity 1.

**Part 2**

With the help of the new terms you have learned, make a flow chart of the hiring process of MND Company.

**Activity De-brief**

- Ask the groups to share the flow charts and the new terms they added while preparing the flow chart.

**Do** 

- Instruct the participants that they have to use the 2nd half of the same chart they had used before.
- Using the new terminology and the terms they had previously written on the chart, they have to make a flow chart of the hiring process of the MND Company.
- Give them 10 minutes for this activity.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

**Say** 

- Let's go ahead with the activity.

**Team Activity** **Terms and Terminology**

- The activity continues with the same group members.

**Part 3**

Sheila now works for the MND Company. She is not aware of the company culture and policies. She goes to the HR Department to get her doubts clarified. Can you think of the terms for which she wants clarity? Make a list of those words.

**Activity De-brief**

- Ask the groups to share their list of words. Some of the words are benefits, comp. time, deduction, employee training, holidays, lay-off, leave, maternity leave, mentor, notice, paternity leave, and time sheet.

**Do**

- Instruct the participants to identify the key terms an employee of a company should know. They can use the same chart paper for this activity.
- Give them 5 minutes for this activity.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

**Summarize**

- Note: You can either summarize the key points of the unit or have a role play where an employee has just joined a company and the HR Manager explains the terms of employment.

## Unit 11.5: Understanding Entrepreneurship

### Key Learning Outcomes



At the end of this unit, participants will be able to:

1. Discuss the concept of entrepreneurship
2. Discuss the importance of entrepreneurship
3. Describe the characteristics of an entrepreneur
4. Describe the different types of enterprises
5. List the qualities of an effective leader
6. Discuss the benefits of effective leadership
7. List the traits of an effective team
8. Discuss the importance of listening effectively
9. Discuss how to listen effectively
10. Discuss the importance of speaking effectively
11. Discuss how to speak effectively
12. Discuss how to solve problems
13. List important problem solving traits
14. Discuss ways to assess problem solving skills
15. Discuss the importance of negotiation
16. Discuss how to negotiate
17. Discuss how to identify new business opportunities
18. Discuss how to identify business opportunities within your business
19. Explain the meaning of entrepreneur
20. Describe the different types of entrepreneurs
21. List the characteristics of entrepreneurs
22. Recall entrepreneur success stories
23. Discuss the entrepreneurial process
24. Describe the entrepreneurship ecosystem
25. Discuss the purpose of the Make in India campaign
26. Discuss key schemes to promote entrepreneurs
27. Discuss the relationship between entrepreneurship and risk appetite
28. Discuss the relationship between entrepreneurship and resilience
29. Describe the characteristics of a resilient entrepreneur
30. Discuss how to deal with failure

## 11.5.1: Concept Introduction (Characteristic of an Entrepreneur, types of firms/ types of enterprises)

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the concept of entrepreneurship
- Discuss the importance of entrepreneurship
- Discuss the characteristics of an entrepreneur
- Describe the different types of enterprises

### Resources to be Used

- Participant Handbook

### Say

- Let's start this session with some interesting questions about Indian entrepreneurs.

### Team Activity

#### Quiz Questions

1. Who is the founder of Reliance Industries?  
Dhirubhai Ambani
2. Who is the Chairman of Wipro Limited?  
Azim Premji
3. Who launched e-commerce website Flipkart?  
Sachin Bansal and Binny Bansal
4. Who is the founder of Paytm?  
Vijay Shekhar Sharma
5. Who is CEO of OLA Cabs?  
Bhavish Aggarwal
6. Who is the founder of Jugnoo?  
Samar Singla (autorickshaw aggregator)
7. Who is the founder of OYO Rooms?  
Bhavish Aggarwal

### Do

- Tell them that you will ask them few questions about a few entrepreneurs.
- Divide the class in to two groups.
- In turns ask the quiz questions to the groups.
- If the answer is incorrect pass the question to the other group.
- Share the answer if the groups are not able to answer.
- Congratulate the participants who answered correctly.

## Ask



- What do you understand by entrepreneurs?
- What is the importance of entrepreneurship in today's scenario?
- What do you think are the characteristics of successful entrepreneurs?
- What are different types of enterprises that an entrepreneur in India can own and run?

## Say



- Talk about entrepreneurs, importance of entrepreneurship, characteristics of successful entrepreneurs, and different types of enterprises in India as discussed in the Participant Handbook.
- Tell the participants, stories of successful Indian entrepreneurs- their struggles, the moments of heartbreak, the perseverance and triumph.
- Ask them if they know of any such entrepreneur.

## Summarize



- Close the discussion by summarizing about the opportunities for entrepreneurs in India.

## Notes for Facilitation



- Check out different Government schemes for small entrepreneurs. Share the information with the participants.
- You can tell them about the government websites like Start Up India, [mudra.org.in](http://mudra.org.in) etc.
- Discuss about various schemes and policies by the Government of India for entrepreneurs.

## 11.5.2: Leadership and Teamwork

### Unit Objectives

At the end of this unit, participants will be able to:

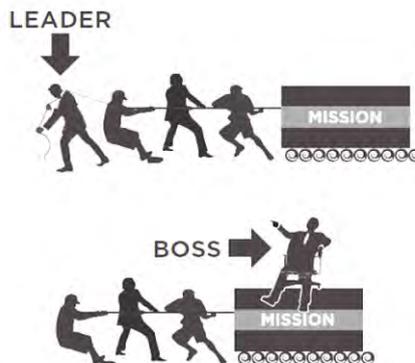
- List the qualities of an effective leader
- Discuss the benefits of effective leadership
- List the traits of an effective team

### Resources to be Used

- Participant Handbook
- Blank sheets of paper
- Pens

### Do

- Show the picture given below to the class.
- Ask them to quickly write on a piece of paper what comes to their mind after seeing the picture.
- Now ask them, “What do you understand from this picture?”
- Encourage participants to share their thoughts.



### Say

- This picture depicts the qualities of a leader and the difference between a leader and a boss.
- A boss focuses on structure and inspires fear whereas a leader follows vision and generates enthusiasm.
- A boss blames employees for the breakdown whereas a leader fixes breakdowns.
- A boss depends on authority whereas a leader depends on goodwill.
- A boss says “I” and a leader says “We.”
- A boss drives employees whereas a leader coaches them.
- A boss takes credit whereas a leader gives credit.

### Say

- Talk about leadership and leadership qualities for an entrepreneur as discussed in the Participant Handbook.

### Ask

- Why is it important for a leader to be effective? How does it help the organization?

**Say** 

- Let us discuss benefits of effective leadership as discussed in the Participant Handbook.
- “Out-of-the-box thinking” is one of the new leadership styles. It means thinking differently and from a new perspective.

**Ask** 

- Do you consider yourself a team player?

**Team Activity** **Long Chain**

- This is a group activity.

**Do** 

- Divide the class into 2 teams.
- Ask each team to create a chain using materials they have in class such as shoe laces, belts, paper, handkerchief, ribbons, etc.
- The team that creates the longest chain wins the game.
- Observe if the participants are interacting with their team or working in isolation.
- Share your observations with the class.

**Say** **De-brief:**

- What did the winning team do differently?
- Who was responsible for the winning team's success?
- How does this activity explain the role of teamwork in entrepreneurial success?

**Say** 

- Tell the class that both the teams performed well.
- Discuss that the objective of this activity was to open communication channels and how this has been achieved.
- The participants should aim to keep the communication channels open when interacting with their peers and team members.
- It will set the pace and enthusiasm required for all the ensuing teamwork activities.
- Talk about teamwork and importance of teamwork in entrepreneurial success as discussed in the Participant Handbook.

**Summarize** 

- Close the discussion by summarizing about the importance of teamwork for employees.
  - Teamwork helps in reducing stress for the employees.
  - Teamwork helps employers in generating more number of solutions to a problem and developing improved communication amongst employees.
- Ask the participants what they have learned from these exercises.
- Ask if they have any questions related to what they have talked about so far.

## 11.5.3: Communication Skills: Listening & Speaking: The Importance of Listening Effectively

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the importance of listening effectively
- Discuss how to listen effectively
- Discuss the importance of speaking effectively
- Discuss how to speak effectively

### Resources to be Used

- Participant Handbook

### Activity 1

#### Activity – Chinese Whisper

Step 1: Form a circle.

Step 2: Start a whisper chain. Any one participant will whisper a message into his/her neighbour's ear. No one else must hear the message. The message can be serious or downright silly.

Step 3: The next person who first heard the message should whisper the message very quickly to the person sitting next to them.

Step 4: The game goes on until the last person says whatever they heard out loud and the first person reveals the real message.

Compare them and have a great laugh!

### Ask

#### De-brief questions:

- Was the original message the same as the message that is communicated at the end of the game?
- Why do you think there was a difference in the messages?

### Say

- No, the original message was not same at the end of game.
- The barriers to communication like language, disturbance and noise, poor listening skills, boredom, poor speaking skills, etc. are the potential reasons this happens.
- There are various aspects to communication. Speaking skills and listening skills are two major components to any communication. There is always some room for improvement in the way we communicate.
- It is important to accept the reality of miscommunication and work to minimise its negative impacts.

## Say

- Communication is a two-way process where people exchange information or express their thoughts and feelings
- It involves effective speaking and effective listening.
- If I go to the store to get bread, I exchange money for the bread. I give something and get something in return. Communication takes place in the same manner. You have to provide and receive information for communication to take place.

## Ask

- How often do you hear these statements?
  - ♦ “You're not listening to me!”
  - ♦ “Why don't you let me finish what I'm saying?”
  - ♦ “You just don't understand!”
- What do you think the other person is trying to convey to you through these sentences?
- We will not talk about the importance of listening effectively as discussed in the Participant Handbook.

## Say

- Let's play a game to understand effective listening process better.

## Do

- This is a class activity.
- The participants need to answer the questions they hear.
- Instruct them to listen carefully.
- You will read it at a stretch and if need be repeat it once more.
- Tell the participants to raise their hand if they know the answer to the question asked.
- Keep a check on time.

## Activity 2

### Riddles:

Is there any law against a man marrying his widow's sister?

If you went to bed at eight o'clock at night and set the clock's alarm to ring at nine o'clock, how many hours of sleep would you get?

Do they have a 26th of January in England?

If you had only one match and entered a dark room that had a kerosene lamp, oil heater, and a wood stove, what would you light first?

The Delhi Daredevils and the Chennai Super Kings play five IPL matches. Each wins three matches. No match was a tie or dispute. How is this possible?

There was an airplane crash. Every single person died, but two people survived. How is this possible?

If an airplane crashes on the border of two countries, would unidentified survivors be buried in the country they were travelling to or the country they were travelling from?

A man builds an ordinary house with four sides except that each side has a southern exposure. A bear comes to the door and rings the doorbell. What is the colour of the bear?

**Answers:**

There's no law against a man marrying his widow's sister, but it would be the neatest trick in the book since to have a widow, the man would have to be dead.

You'd get one hour's sleep since alarm clocks do not know the difference between morning and night.

Oh, yes. They have a 26th of January in England. They also have a 27th, a 28th, and so on.

First of all, you would light the match.

Who said the Delhi Daredevils and the Chennai Super Kings were playing against each other in those games?

Every SINGLE person died, but those two were married.

You can't bury survivors under any law especially if they still have enough strength to object.

The bear that rang the doorbell would have to be a white bear. The only place you could build a house with four southern exposures is at the North Pole where every direction is in South.

**Ask****De-brief question:**

- What were the barriers that came into your way of listening?
- How can you overcome barriers to listening?

**Say**

- There is a difference between hearing and listening.
- If you don't listen properly, the message may be misunderstood.
- Be open-minded while listening to someone.
- It is important to listen effectively and carefully without making assumptions.

**Activity 3****Elevator Pitch:**

You are in the lift of a hotel and you bumped into your former client who is a famous businessman. He has financed a lot of small business ventures and can finance your new start-up too. After exchanging pleasantries, he asks you what your new company does. You open your mouth, and then pause. Where do you even begin?

Then, as you try to organize your thoughts, his meeting is called, and he is on his way. If you would be better prepared, you're sure that he would have stayed long enough to schedule a meeting with you too.

If you were given another chance, what would you have said to this person?

**Do**

- Start off the task by providing a beginning sentence to get the story started, and then go around the classroom getting each one to add a new sentence to keep the story going.
- This task should be done spontaneously allowing only a little time to think (30 seconds).
- For example: **There was once a student who was looking for a job after graduation.**

## Notes for Facilitation

- Tell the participants to follow these steps to create a great pitch, but bear in mind that you'll need to vary your approach depending on what your pitch is about.
  1. **Identify Your Goal:** Start by thinking about the objective of your pitch. For instance, do you want to tell the potential clients about your organization? Do you have a great new product idea that you want to pitch to an executive or do you want a simple and engaging speech to explain what you do for a living?
  2. **Explain What You Do:** Start your pitch by describing what your organization does. Focus on the problems that you solve and how you help people. Ask yourself this question as you start writing: what do you want your audience to remember most about you? Keep in mind that your pitch should excite you first. After all, if you don't get excited about what you're saying neither will your audience. People may not remember everything that you say, but they will likely remember your enthusiasm.
  3. **Communicate Your USP:** Your elevator pitch also needs to communicate your unique selling proposition or USP. Identify what makes you, your organization or your idea unique. You'll want to communicate your USP after you've talked about what you do.
  4. **Engage with a Question:** After you communicate your USP, you need to engage your audience. To do this, prepare open-ended questions (questions that can't be answered with a "yes" or "no" answer) to involve them in the conversation. Make sure that you're able to answer any questions that he or she may have.
  5. **Put it all Together:** When you've completed each section of your pitch, put it all together. Then, read it aloud and use a stopwatch to time how long it takes. It should be no longer than 20-30 seconds. Remember, the shorter it is, the better!

### Example:

Here's how your pitch could come together:

"My company deals with cloth retail online business and we use various e-commerce platforms to sell our products. This means that you can do shopping with ease and spend time on other important tasks. Unlike other similar companies, we have a strong feedback mechanism to find out exactly what people need. This means that, on average, 95 percent of our clients are happy with our products. So, how can you help us in creating our own web portal?"

6. **Practice:** Like anything else, practice makes perfect. Remember, how you say it is just as important as what you say. If you don't practice, it's likely that you'll talk too fast, sound unnatural or forget important elements of your pitch. Set a goal to practice your pitch regularly. The more you practice, the more natural your pitch will become. Practice in front of a mirror or in front of colleagues until the pitch feels natural.

## Summarize

- Close the discussion by summarizing how to speak effectively as discussed in the Participant Handbook.

## 11.5.4: Problem Solving & Negotiation Skills

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss how to solve problems
- List the important problem solving traits
- Discuss ways to assess problem solving skills
- Discuss the importance of negotiation
- Discuss how to negotiate

### Resources to be Used

- Participant Handbook

### Ask

- What is a 'problem'?
- What do you think are the problems you may face in the process of becoming a successful entrepreneur?

### Say

- Discuss the definition of problem as given in the Participant Handbook.
- In a hurdle race the hurdles are the obstacles on the way to reach your goal.
- Similarly, obstacles are the hurdles you may face while reaching your goal i.e. to set-up your own business. Your goal will be to reach the finishing line after crossing these hurdles.

### Ask

- What do you do when you face a problem?
- How do you resolve it? You can pick examples from the question asked previously 'the problems they are likely to face in the process of becoming a successful entrepreneur'.

### Say

- Discuss how to solve problems as given in the Participant Handbook.

### Team Activity

- This is a group activity.
  - The groups will solve the problem and come up with the best solution in each case.
1. Unable to arrange for some extra finance for setting up a beauty parlour. The loan sanctioned and disbursed is not enough. You have tried all your contacts, friends and relatives. But unable to manage the extra amount. Bank will not sanction more amount as you have used up the complete sanction limit.
  2. You have rented a space for your business and all arrangements are done. You will be operating from the office space rented in two days. Now the owner comes up to you and says he wants to sell the place and wants you to vacate in 15 days.
  3. You have just set up your business and need extra human resource. You have tried involving a few also tied up with an agency for getting the right candidate. But you are unable to get the right candidate. If the candidate is good, you cannot offer the salary demanded. If the candidate agrees to the salary, he/she has other demands like working hours to be reduced, leaves etc. which may not work for your set up.

**Do** 

- Divide the class into three groups. Give one scenario to each group.
- Explain the purpose and duration of the activity.
- Ask the groups to build on the scenario and present their solution as a role play.

**Say** **De-brief questions:**

1. What was the problem?
2. Is there any other alternative solution?
3. Is this the best solution presented?

**Ask** 

- Try to think of some people around you who are able to solve problems very easily. Even you or your friends might be approaching them when there is a problem. What qualities do they have? What personality traits do such people possess?

**Say** 

- Discuss the important traits for problem-solving as given in the Participant Handbook.

**Ask** 

- In order to build a successful organization, you need to hire people who possess good problem solving skills. How would you assess the level of problem solving skills of potential candidates before hiring them?

**Say** 

- Discuss how to assess for problem-solving skills as given in the Participant Handbook.

**Summarize** 

- Ask the participants the things that they have learnt so far.
- Ask if they have any questions related to what they have talked about so far.
- Summarize the discussion on problem solving.

**Activity** 

- The activity is to organise an election event. Select three volunteers from the group. They have to give a speech on their election manifesto to the class. They have to negotiate with the fellow participants and convince them to vote for them. The best negotiator will win the election.

**Do** 

- Ask three participants to volunteer for the activity.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

**Ask** 

- Out of the three contestants, whom would you support? Why? What did they say or do which convinced you to make your decision?
- Have you ever tried to negotiate in your personal or professional life?
- Ask the class to share some of their experiences where they have been able to strike a deal by negotiating.

**Say** 

- Discuss “What is Negotiation?” as given in the Participant Handbook.

**Ask** 

- Why is it important to negotiate? As an entrepreneur, where do you think that negotiation skills will be needed?

**Say** 

- Discuss the importance of negotiation while starting a business as given in the Participant Handbook.

**Say** 

- Discuss the important steps to negotiate as given in the Participant Handbook.

**Role Play** 

- Conduct a role play activity.
- Ask the participants to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

**Do** 

- Divide them into groups of four (4) (depending on the batch size).
- Give them the hand-outs for role play scenarios.
- Two groups to be given scenarios on problem solving.
- Other two groups to be given scenarios on negotiation.
- The groups will build on the scenarios and prepare for the role play.
- Give the groups atleast 5 mins to discuss and be ready with the role play.
- Invite each group one by one to come and present their role play.

**Problem solving Scenario 1**

Avinash has a Mobile Repair Store in Allahabad. His outlet is one of the most popular one in the vicinity and he has great rapport with his customers. He is always well-dressed, jovial and full of energy.

It's around 11 AM, when a customer barges in to the shop and starts shouting at Avinash for giving her back the instrument which is still not working. The screen of her mobile is also cracked from one side. Avinash remembered thoroughly checking the handset before handing it over to the customer. The customer threatens to sue the company and to go to Consumer Court for cheating her.

**Problem solving Scenario 2**

You are running a successful small scale business, Shreeji Aggarbattis,. Your staff members do door to door selling and organise marketing campaigns in local markets. Your brand has established it's name in last few years.

Recently, lot of customers have been coming to you and lodging complaints that your staff members indulge in malpractices. Few of them informed you that a staff member engaged them in a friendly conversation. In the meanwhile, the other gave them lesser packets of aggarbattis than they paid for.

Another set of customers lodged complaint about the misconduct and rude behaviour of a particular staff member.

You often hear from your customers that the orders don't get delivered on time or wrong products get delivered.

You have already been struggling with shortage of staff and such complaints are a serious concern as it is hampering your brand image. What strategies will you adopt to solve this problem?

**Negotiation Scenario 1**

You have interviewed a prospective new employee who could be a key member of your new entrepreneurial venture. The new person is demanding a salary that is 20% higher than you thought based on your business plan. Finances are tight, yet you believe this person could make a significant impact on future profits. If you paid the required salary for the new person, then you would have to restructure your entire business plan. You've been searching for an individual with this skill level for three months. to the candidate is waiting for your response. Now you have to call him in to make the final negotiations.

**Negotiation Scenario 2**

You are a young entrepreneur who has just registered his start up project and applied for a bank loan accordingly. You receive a letter saying that your loan application has been rejected as your start up idea did not appeal to the bank and they think that it is not a revenue generating model. You have taken an appointment to meet the manager and show your negotiation skills to get your loan approved.

## Notes for Facilitation

**Facilitating Role Plays****Preparing for the activity**

1. Carefully review the details of the scenario and the character descriptions.
2. Become familiar with the key issues being addressed in the scenario.
3. Study the provided material so that you are ready to address issues related to the situations depicted in the role-plays.
4. Anticipate and know how to address issues participants might raise during the activity.

**Conducting the activity**

1. Introduce the activity. Emphasize that role-playing provides participants with an opportunity to apply their new knowledge, skills, and tools in situations that simulate actual interactions with customers.
2. Ask participants to form pairs. Direct the members of each group to choose who will play the roles. Remind the groups that each participant should be given the opportunity to play/practice the different roles.
3. Conduct a demonstration so that participants become familiar with the expectations related to the roles and support materials.
4. Give the pairs/ groups 10 to 15 minutes to conduct the role-play (depending on the duration of the session).
5. After all the groups have finished with the role-play, conduct a debriefing session on each role-play.
6. Ask the groups to take five minutes to talk about what happened during the role-play. The groups should discuss the questions given in the debriefing for each role-play. Encourage participants to provide constructive criticism during their discussions.

## Summarize



- Wrap the unit up after summarizing the key points and answering questions.

## 11.5.5: Business Opportunity Identification: Entrepreneurs and Opportunities

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss how to identify new business opportunities
- Discuss how to identify business opportunities within their business

### Resources to be Used

- Participant Handbook
- Blank sheets of paper
- Pens

### Ask

- How does an entrepreneur identify an opportunity?
- What do you think are the common queries or concerns faced by entrepreneurs?
- How can you identify new business opportunity?

### Say

- Let's talk about opportunity, common queries or concerns faced by entrepreneurs, idea as an opportunity, factors to consider when looking for opportunities, ways to identify new business, and opportunity analysis as discussed in Participant Handbook.
- Let's do an activity to understand ways to identify business opportunities within your business.

### Do

- Tell the class that this is an individual activity.
- Tell the participants to create a matrix on their notebooks.
- There will be four boxes in your matrix.
- Strength, Weakness, Opportunity and Threats will be the four headings of the matrix. This is called the SWOT matrix.
- Read out the questions to them and tell the participants they need to answer the questions asked in each matrix.
- Tell them they can also use their own understanding of themselves to fill the SWOT matrix.

### Activity

#### Do your SWOT analysis

#### Strength

What are your strengths?  
 What unique capabilities do you possess?  
 What do you do better than others?  
 What do others perceive as your strengths?

#### Weakness

What are your weaknesses?  
 What do your competitors do better than you?

#### Opportunity

What trends may positively impact you?  
 What opportunities are available to you?

#### Threat

Do you have solid financial support?  
 What trends may negatively impact you?

**Do**

- Congratulate everyone for the class activity.
- Ask the audience to applaud for themselves.
- Allot the participants sufficient time to complete this activity, but do keep a check on time.
- Ask de-brief questions to cull out information from the participants.

**Ask****De-brief questions:**

- What are your weaknesses according to your SWOT analysis?
- Do you think you can change your weakness into strength? How?
- Do you think you can work on your threats? How?

**Summarize**

- Close the discussion by summarizing ways to identify business opportunities within your business.
- Ask the participants what they have learned from this exercise.
- Ask if they have any questions related to what they have talked about so far.

## 11.5.6: Entrepreneurship Support Eco-System

### Unit Objectives

At the end of this unit, participants will be able to:

- Explain the meaning of entrepreneur
- Describe the different types of entrepreneurs
- List the characteristics of entrepreneurs
- Recall entrepreneur success stories
- Discuss the entrepreneurial process
- Describe the entrepreneurship ecosystem
- Discuss the purpose of the 'Make in India' campaign
- Discuss the key schemes to promote entrepreneurs

### Resources to be Used

- Participant Handbook
- Chart papers
- Marker pens
- Pencils
- Colour pencils
- Scale
- Eraser
- Other requisite stationery material

### Ask

- Do you think that entrepreneurs need support?
- What do you think is an eco-system?
- What do you think 'entrepreneurship support eco-system' means?

### Say

- Let's learn what entrepreneurship support eco-system means.
- Discuss 'Entrepreneurship Support Eco-System' as given in the Participant Handbook.

### Ask

- Can you define entrepreneurship support eco-system?
- What are the key domains of the support eco-system?

### Say

- Let's learn more about these domains by conducting an activity.
- You have to make a poster showing the components of the six main domains of entrepreneurship support eco-system.

### Team Activity

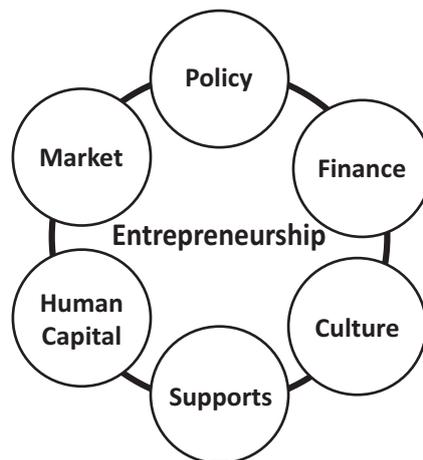
- Making a poster showing the entrepreneurship support eco-system.

## Do

- Divide the class into groups of four or six.
- Hand out chart paper and coloured pens.
- Explain the purpose and duration of the activity.
- Go around checking the progress of each group.
- Set guidelines pertaining to discipline and expected tasks.

### Activity De-brief

Ask each group to display their poster and explain the key domains of entrepreneurship support eco-system.



## Ask

- What kind of government support eco-system is available for entrepreneurs in India?

## Say

- Discuss 'Make in India' campaign as given in the Participant Handbook.

## Team Activity

- Presentation on key schemes to promote entrepreneurs

## Do

- Divide the class into pairs.
- Number each pair from 1-15.
- Assign a scheme, same as their group number, to each group.
- Ask them to read the scheme carefully and present it to the class.
- Explain the purpose and duration of the activity.
- Go around checking the progress of each group.
- Set guidelines pertaining to discipline and expected tasks.

### Activity De-brief

- Ask each group to explain the scheme offered by government to promote entrepreneurs.

## Summarize

- Summarize the unit by discussing the key points and answering questions the participants may have.

## 11.5.7: Risk Appetite & Resilience

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the relationship between entrepreneurship and risk appetite
- Discuss the relationship between entrepreneurship and resilience
- Describe the characteristics of a resilient entrepreneur

### Resources to be Used

- Participant Handbook
- Chart papers
- Blank sheets of paper
- Pens
- Marker pens

### Ask

- Can you define risk or explain what constitutes a risk?
- What do you people mean when they say, “This may be a risky proposition”?
- What risks are they talking about?

### Example

- Let's have a look at these two examples:

Rohit and his family were travelling by car from Delhi to Nainital. It was their second trip there. Rohit was familiar with the road. His friends told him that the highway after Rampur was in a bad condition. They advised him to take a shortcut and turn left from Moradabad and take the Kaladhungi road. This road is in a better condition.

Since he was going with his family, and did not want to take the risk of getting lost, he left early. He took the Kaladhungi road and reached Nainital well in time.

Suresh and his family too were travelling by car from Delhi to Nainital. It was their second trip there. His friends too advised him to take a shortcut and turn left from Moradabad and take the Kaladhungi road as this road was in a better condition.

Suresh too decided to take the Kaladhungi road but he left Delhi in the afternoon. It was dark by the time he reached Kaladhungi, and he was sure that he was taking the correct turn. As it was late, he could not find anyone to give him directions. He ended up being in an unknown place that was scarcely inhabited.

### Say

- Let's see what type of risks Rohit and Suresh took.
- Discuss 'Risk Appetite and Resilience' with the participants as given in the Participant Handbook.

### Say

- Let's learn more about risk appetite and resilience with the help of an activity.

## Team Activity

### Risk Appetite

- This is a group activity.
- In the previous unit, you read success stories of Mr Dhirubhai Ambani and Dr Karsanbhai Patel.
  - Mr Ambani left his job and started his company Reliance with just Rs. 50,000/-.
  - Dr Patel kept his job, went door-to-door to sell Nirma, and only when the brand started gaining popularity did he start his own company.
  - What types of risk did both of them take?
  - What risk factors, do you think, did they keep in mind before launching their company?
  - Write the Risk Appetite Statement of both the companies.

### Activity De-brief

- Who took a greater risk?
- What are the differences between the Risk Appetite Statement of both the companies?

## Do

- Instruct the participants that this is group work.
- Divide the class into small groups of 4.
- Give each group a chart paper.
- Tell the participants that they have to evaluate the risks taken by Mr Dhirubhai Ambani and Dr Karsanbhai Patel.
- Give the participants 15 minutes to discuss and write.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

## Ask

- Do you think all entrepreneurial ventures are successful?
- What happens if the first venture is not successful?
- Should the entrepreneur stop when faced with challenges or face them?

## Example

- Let's have a look at the following example:

Vijay Shekhar Sharma is the founder of Paytm, which is a giant Indian e-commerce. He was born in a middle-class family in Uttar Pradesh. He started his first job at an MNC. He quit after six months and built a company One97 with his friends. As One97 grew bigger, it needed more money because it was running more servers, bigger teams, and had to pay royalty. At that time, the tech bubble popped and technology companies were running in losses. Finally, money ran out. So One97 took loans and then more loans at higher rates of interest, as high as 24 per cent, and became caught in a vicious cycle.

In 2014, Paytm was launched with online wallet services after which, the company enabled online payment transactions. The company got licenses from RBI in 2016 to launch India's first ever payment bank. Moreover, the main motive of Paytm was to transform India into a cashless economy.

After demonetization came into effect, Vijay Shekhar Sharma started promoting online and digital transactions to deal with the cash crunch. In fact, the service of the company's mobile wallet is accepted across India. The logo of Paytm is now popular almost everywhere from tea stalls to major companies.

## Say

- Let's see what qualities made Vijay Shekhar Sharma a resilient entrepreneur.
- Discuss Entrepreneurship and Resilience with the participants as given in the Participant Handbook.

## Say

- Let's learn more about entrepreneurship and resilience with the help of an activity.

## Team Activity

### Entrepreneurship and Resilience

- This is a group activity.
- Think of some entrepreneurship ventures that faced challenging times, but later resulted in success stories.
  - Who is the founder of that company?
  - What challenging times did it face?
  - How did it overcome those challenges?
  - List the resilient characteristics of the entrepreneur.

### Activity De-brief

- Each group to give their presentation.
- Why did you choose this company?
- What is the success story of the company?

## Do

- Instruct the participants that this is group work.
- Divide the class into small groups of 4.
- Give each group a chart paper.
- Tell the participants that they have to think of an entrepreneur who faced challenging times, but eventually succeeded.
- Give the participants 15 minutes to discuss and write.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

## Summarize

- You can summarize the key points of the unit.
- Ask the participants what they learned from the activities.
- Clarify any questions or doubts they might have.

## 11.5.8: Success and Failures

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss how to deal with failure

### Resources to be Used

- Participant Handbook

### Ask

- Have you heard the quote 'nothing is impossible'?
- What do you think it means?
- Do you think that all successful entrepreneurs became famous overnight or did they have to struggle or face failure before succeeding?

### Example

- Let's have a look at this example.

Shah Rukh Khan, also known as, SRK or King Khan is a force to reckon with. Did he achieve stardom overnight? Shah Rukh Khan, who has seen many struggles in his life – he has slept on streets, struggled to support himself and his sister at a very young age, and lost his parents very early in life, which led to his sister seeking mental health support. Amidst all the chaos and challenges, he kept pushing himself, and today he stands tall as the 'Badshah of Bollywood'. Certainly those years were not easy for him.

When he was young, he stood at Marine Drive and said, "I will rule this city one day". Failure was not just his companion during or before his stardom, it is still a substantial part of his life. Success does not come easy. What made him a star was his acceptance of failure and the urge to improve.

### Say

- How do you define success and failure?
- What is fear?
- Discuss "success and failure" with the participants as given in the Participant Handbook.

### Ask

- Have you felt or experienced fear?
- What led you to feel that emotion?
- How did you handle it?

### Say

- Let's learn the about success and failure with the help of an activity.

## Team Activity

- Divide the class into groups of four.
- Instruct them to think of one scenario where they have to interview a successful entrepreneur.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.
- They have to choose one person from the group as the interviewee and one as the interviewer.
- Go around and make sure they have understood what is to be done and are discussing the roles properly.
- Check that everyone understands their role. Give clarifications if needed. Give the participants about 5 minutes to discuss and decide their roles.
- Ask the groups to stop the discussion as soon as the time is over.
- Invite each group one by one to come and present their interview as a role play.

## Notes for Facilitation

### Facilitating Role Plays

#### Preparing for the activity

1. Carefully review the details of the scenario and the character descriptions.
2. Become familiar with the key issues being addressed in the scenario.
3. Study the provided material so that you are ready to address issues related to the situations depicted in the role plays.
4. Anticipate potential questions that might be raised by the participants and be ready to address them.

#### Conducting the activity

1. Introduce the activity. Emphasize that role playing provides participants with an opportunity to apply their new knowledge, skills, and tools in situations that simulate actual interactions with customers.
2. Ask participants to form pairs. Direct the members of each group to choose who will play the roles. Remind the groups that each participant should be given the opportunity to play/practice the different roles.
3. Conduct a demonstration so that participants become familiar with the expectations related to the roles and support materials.
4. To maintain spontaneity of the interactions during the role play, ask the participants not to discuss the details of their roles prior to the role play.
5. Give the pairs 15-20 minutes to conduct the role play.
6. Circulate among the groups to answer any questions that may arise and provide guidance as needed.
7. After all the pairs have finished with the role play, conduct a de-briefing session on each role play.
8. Ask the groups to take five minutes to talk about what happened during the role play. The groups should discuss the questions given in the de-briefing for each role play. Encourage participants to provide constructive criticism during their discussions.
9. Conclude the activity by asking participants to think about whether and how they might use scripted role plays in their real life.

## Summarize

- Wrap the unit up after summarizing the key points and answering questions.

## Unit 11.6: Preparing to be an Entrepreneur

### Key Learning Outcomes



At the end of this unit, participants will be able to:

1. Discuss how market research is carried out
2. Describe the 4 Ps of marketing
3. Discuss the importance of idea generation
4. Recall basic business terminology
5. Discuss the need for CRM
6. Discuss the benefits of CRM
7. Discuss the need for networking
8. Discuss the benefits of networking
9. Discuss the importance of setting goals
10. Differentiate between short-term, medium-term and long-term goals
11. Discuss how to write a business plan
12. Explain the financial planning process
13. Discuss ways to manage your risk
14. Describe the procedure and formalities for applying for bank finance
15. Discuss how to manage their own enterprise
16. List the important questions that every entrepreneur should ask before starting an enterprise

## 11.6.1: Market Study/ The 4Ps of Marketing/ Importance of an IDEA: Understanding Market Research

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss how market research is carried out
- Describe the 4 Ps of marketing
- Discuss the importance of idea generation

### Resources to be Used

- Participant Handbook
- Chart papers
- Markers pens
- Blank sheets of paper

### Ask

- Suppose, you want to open a restaurant, what are the factors you will consider?
- How will you promote your restaurant?

### Example

- Let's have a look at this example.

Arjun was an MBA working in a company. But he wanted to start a low cost budget hostel for foreign tourists coming to India. He did a lot of market research before starting the project. Based on the information he gathered, he made his business plan. His hostel is now flourishing and he is thinking of expanding to other tourist destinations.

### Say

- Discuss "Market Study" with the participants. Refer to the Participant Handbook.
- Let's learn about market study and research with the help of an activity.

### Team Activity

#### Market Study

- This is a group activity.
- You want to start your own tuition centre.
- What type of research will you do?

#### Activity De-brief

- Ask each group to come forward and give a brief presentation.
- Encourage other groups to be interactive and ask questions.
- What factors did you keep in mind while doing your research?
- Based on our research would you go ahead and open a tuition centre?

**Do** 

- Instruct the participants that this is group work.
- Divide the class into small groups of 4 or 6.
- Give each group a chart paper.
- Tell the participants that they have to start their own tuition centre.
- Give the participants 10 minutes to discuss and write the research work they need to do.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

**Say** 

- By opening a tuition centre you are offering a service.

**Ask** 

- What factors will you keep in mind before opening it?

**Say** 

- Discuss “The 4Ps of Marketing” with the participants as given in the Participant Handbook.

**Say** 

- Let's learn about the 4Ps of Marketing with the help of an activity.

**Team Activity** **4 Ps of Marketing**

- This is a group activity.
- You have to sell a pen to four different segments:
  1. Rural villagers
  2. Rural middle class
  3. Urban middle class
  4. Upper end rich people (Niche market)

Keeping the 4Ps of Marketing in mind, what marketing strategy will you design to sell the pen?

**Activity De-brief**

- Ask each group to present their strategy.
- Encourage other groups to be interactive and ask questions.

**Do** 

- Instruct the participants that this is group work.
- Divide the class into four groups.
- Give each group a chart paper.
- Assign each group a target audience for selling the pens:
  1. Rural villagers
  2. Rural middle class
  3. Urban middle class

- 4. Upper end rich people
- Tell the participants that they have to design a marketing strategy keeping the 4Ps of Marketing in mind.
- Give the participants 20 minutes to discuss and come up with their strategy.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit

**Activity De-brief**

- Ask each group to come forward and give a brief presentation.
- Ask each group what they kept in mind while designing their marketing strategy.
- Encourage other groups to be interactive and ask questions.

**Say**

- Each entrepreneur has an idea of wants he wants to sell. It may be a service or a product.
- Discuss “Importance of an IDEA” as given in the Participant Handbook.

**Summarize**

- Summarize the key points of the unit.
- Ask the participants what they learnt from the activities.
- Encourage them to ask if they have any doubts.

## 11.6.2: Business Entity Concepts

### Unit Objectives

At the end of this unit, participants will be able to:

- Recall basic business terminology

### Resources to be Used

- Participant Handbook

### Say

- Let's recall some basic business terminology.
- Discuss the Business Entity Concepts as given in the Participant Handbook.
- Let's learn some basic business terminology by having an activity.
- We will have a quiz today.

### Activity

- The activity is a quiz.

### Do

- Divide the class in two groups and give a name to each group.
- Explain the rules of the quiz. For each correct answer the group gets 1 mark.
- If the group is unable to answer the question is passed to the next group.
- Explain the purpose and duration of the activity.
- Ask the questions of the quiz.
- Keep a score of the groups.
- Set guidelines pertaining to discipline and expected tasks.

### Summarize

- Summarize the unit by discussing the key points.

### Notes for Facilitation

#### QUESTIONS FOR THE QUIZ

1. What does B2B mean?

*Business to business*

2. What is a financial report?

*A comprehensive account of a business' transactions and expenses*

3. Who is a sales prospect?

*A potential customer*

4. How is working capital calculated?

*Current assets minus current liabilities*

5. What is an estimation of the overall worth of a business called?

*Valuation*

6. You are buying a house. What type of transaction is it?

*Complex transaction*

7. How will you calculate the net income?

*Revenue minus expenses*

8. How is Return on Investment expressed?

*As percentage*

9. How will you calculate the cost of goods sold?

*Cost of materials minus cost of outputs*

10. What is revenue?

*Total amount of income before expenses are subtracted.*

11. What is a Break-Even Point?

*This is the point at which the company will not make a profit or a loss. The total cost and total revenues are equal.*

12. What is the formula used to calculate simple interest?

*$A = P(1 + rt)$ ;  $R = r * 100$*

13. What are the three types of business transactions?

*Simple, Complex and Ongoing Transactions*

14. The degrading value of an asset over time is known as .

*Depreciation*

15. What are the two main types of capital?

*Debt and Equity*

## 11.6.3: CRM & Networking

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the need for CRM
- Discuss the benefits of CRM
- Discuss the need for networking
- Discuss the benefits of networking

### Resources to be Used

- Participant Handbook

### Ask

- Can your business run without customers/buyers?
- Who is the most important entity in any business?

### Say

- The key to every success business lies on understanding the customer's expectations and providing excellent customer service.
- Discuss about CRM and its benefits. Refer to the Participant Handbook.
- Providing excellent customer service entails:
  - ♦ Treating your customers with respect.
  - ♦ Be available as per their need/ schedule.
  - ♦ Handling complaints effectively.
  - ♦ Building long lasting relationships.
  - ♦ Collecting regular feedback.
- Handle customer complaints proactively. Ask “what happened”, “why it happened”, “how can it be avoided next time”, etc.
- Collecting feedback from the customers regularly will enable you to improve your good/service.
- “Let's understand it better with the help of some case scenarios. You will be given some cases within your groups. You have to analyse the case scenario that has been given to you and then find an appropriate solution to the problem.”

### Do

- Divide the class into four groups of maximum six participants depending on the batch size.
- Give one case study to each group.
- Instruct them to read the case carefully.
- The group is expected to analyse and discuss the case amongst them and find a solution to the given problem.
- Put down the discussion points (de-brief questions) on the board. Give the class 5-10 minutes to discuss the case and note down their solutions.
- At the end of 10 minutes, the team should present their case solution to the class.

## Team Activity

### Case Study Analysis

Raju runs a business of wooden furniture. He has a huge list of customers on Facebook and WhatsApp who give him orders regularly. Ankita is one of his old and regular customers. She placed an order for a new chester and TV cabinet via WhatsApp and requested Raju to send them as soon as possible. When the parcel reached Ankita through courier she found that chester was broken and the TV unit was chipped from the bottom. Ankita was heartbroken. It was a complete waste of money. She sent a message to Raju on WhatsApp, expressing her anger and disappointment. Raju might lose an old customer forever if he doesn't satisfy the customer. What should Raju do to retain his customer?

### Scenario 2

Rajni runs a boutique shop. She sells suits and sarees. She is one of the most successful designer in her city. Rajni swears that all the clothes in her boutique have unique designs. Smita has to attend her cousin's wedding; she goes to Rajni's boutique to buy a saree. Smita wanted a unique designer saree. Rajni customized a saree for her and sent it over the courier. When Smita had a look at the saree she realised her two friends had the same design sarees. She sent a message to Rajni on WhatsApp, expressing her anger and disappointment. Did Rajni make a false promise? Were her designs copied? What could happen to Rajni's image after this incident? What would you do if you were in Rajni's place?

### Scenario 3

Shama is a beautician who offers parlour services to ladies by making home visits. Recently, Shama got her name registered on an e-commerce website. Two days earlier, she got a message from Mrs Sushma. The appointment was fixed for next day, 11:00 am and the remuneration for the services was decided beforehand. When Shama reached there at 10:50 am, Mrs Sushma was not at home. When Shama called her, she asked her to wait for a while. Mrs Sushma reached home at 11:45 am. Meanwhile, Shama had to reschedule her next appointment. After availing Shama's services, Mrs Sushma refused to pay the requisite amount and started finding faults in the services provided by her. Who was at fault in this scenario? What should you do in case the customer behaves unreasonably? What would you do if you were in Shama's place?

### Scenario 4

Shailender is the manager of a car showroom. He proactively takes part in all the transactions that happen in his showroom. Vinita wants to buy a new car. She has chosen a car from Shailender's showroom. The salesperson has given her a very good discount and has also promised free service for one year. Vinita goes to the showroom and asks to complete all the formalities to purchase the car. When she sees the final bill she realize that she has not received the promised discount neither was there any mention of the free services. She immediately demands to see the Shailender. When Shailender's head asks how much discount Vinita was promised, he realised the discount will make the sale in loss. The car showroom owner might lose a customer and deal due to false commitments made by his manager. Besides, the customer might tell this to other people, creating a bad name and image for the showroom. If you owned that showroom, how would you have convinced your customer?

## Say

- Now, let's discuss the problem and solution with the class.
- The group will first briefly describe the case to the class.
- Then discuss the issue identified and the proposed solution.
- Present the solution as a role play.
- Post presentation, the other groups may ask questions from the group that has presented.

**Do** 

- Congratulate each group for the presentation/ role play.
- Ask the audience to applaud for them.
- Keep a check on time. Tell the group to wind up the discussion quickly if they go beyond the given time limit.

**Say** 

- If your customers are happy with you they will give referrals which will help to grow your business.
- One more way of growing business is 'Networking'.
- Discuss Networking and its benefits. Refer to the Participant Handbook.

**Activity** **Group Discussion**

- Conduct a group discussion in the class on how they can do networking for their business.

**Summarize** 

- Ask the participants what they have learnt from this exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the importance of CRM and Networking for entrepreneurs.
- Close the discussion by summarizing the importance of CRM and Networking for entrepreneurs.

## 11.6.4: Business Plan: Why Set Goals?

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the importance of setting goals
- Differentiate between short-term, medium-term and long-term goals
- Discuss how to write a business plan
- Explain the financial planning process
- Discuss ways to manage your risk

### Resources to be Used

- Participant Handbook
- Chart papers
- Blank papers
- Marker pens
- Ruler

### Ask

- Remember we had written SMART Goals in a previous session? Let's try and recall why it is important to set goals?
- While framing SMART goals, we talked about 'T' in SMART, which was 'Time Bound'? What do we mean by time bound goals?
- What time limit did you set for your goal- 3 weeks, 3 years, 10 years?

### Say

- Talk about short term, long term and medium term goals, as discussed in the Participant Handbook.

### Ask

- As you are planning to become an entrepreneur, you must have thought of an idea for a start-up. What is your business idea?

### Do

- Ask few participants to share their business ideas.

### Ask

- Have you created a business plan for your business idea?
- Do you think it is important to have a business plan in place? Why/ why not?

### Say

- Talk about 'Why Create a Business Plan' as discussed in the Participant Handbook.
- Let's understand it better with the help of an activity.

## Team Activity

### Writing a business Plan

- This is a group activity.
- Give the groups the required resources such as chart paper and markers.
- This activity is divided into two parts:
  1. Create a business idea
  2. Develop a business plan
- The group will discuss and come up with a new business idea and present their idea to the class.
- In the second part of the activity the group will develop a business plan for the business idea.
- The business plan prepared will be presented by the groups to the class.

<b>MY BUSINESS PLAN</b>
Executive Summary: What is your Mission Statement?
Business Description: What is the nature of your business?
Market Analysis: What is your target market?
Organization and Management: What is your company's organizational structure?
Service or Product Line: What is the lifecycle of your product/ service?
Marketing and Sales: How will you advertise and sell your products?
Funding Request: How much fund is required and from where?

## Say

- Teams will need to brainstorm for this part of the activity.
- Use the blank papers for the second part of this activity
- Make your business plan on a chart paper based on the following parameters:
  1. Executive Summary
  2. Business Description
  3. Market Analysis
  4. Organization and Management
  5. Service or Product Line
  6. Marketing and Sales
- Explain each parameter in detail as done in the Participant Handbook.
- Discuss each parameter with the business idea examples of the groups.
- Groups will discuss and develop the business plan for their business idea.

## Say

- Now, let's share our plan with the class.
- Each group will briefly describe the plan to the class.
- Post presentation, the other groups may ask questions to the group who have presented their plan.

## Do

- Congratulate each group for sharing their points.
- Ask the audience to applaud for them.
- Keep a check on time. Tell group to wind up the discussion quickly if they go beyond the given time limit.

## Say

- Along with a business plan, you need to create a financial plan and evaluate the risk involved with your start up.
- Discuss 'Financial Planning' and 'Risk Management' in detail as given in the Participant Handbook.

## Summarize

- Ask the participants what they have learnt from this exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.

## Notes for Facilitation

- Keep the business plan format ready in a flipchart to display it during the activity.

## 11.6.5: Procedures and Formalities for Bank Finance

### Unit Objectives

At the end of this unit, participants will be able to:

- Describe the procedure and formalities for applying for bank finance

### Resources to be Used

- Participant Handbook
- Bank loan/finance form sample

### Ask

- While preparing a business plan in the last session, we discussed financial planning to arrange financial resources for your start-up. Therefore, how will you collect funds to start your business?

### Say

- While most entrepreneurs think 'product' is the most difficult thing to decide for a business, start-up capital poses an even a bigger obstacle. Though there are various ways of funding the business, to convince investors to invest money is the most challenging.
- Some of the funding options available in India are:
  - ♦ **Bootstrapping:** Also called self-financing is the easiest way of financing
  - ♦ **Crowd funding:** Funds are collected by consumers pre-ordering or donating for starting the business.
  - ♦ **Angel investors:** Individual or group of investors investing in the company
  - ♦ **Venture capitalists:** Venture capitals are professionally managed funds who invest in companies that have huge potential. They usually invest in a business against equity.
  - ♦ **Bank loans:** The most popular method in India.
  - ♦ **Microfinance Providers or NBFCs**
  - ♦ **Government programmes**
- Let us know discuss the most popular method i.e. bank finance in detail here.

### Do

- Discuss the list of documents that are required to apply for a loan like letter of introduction, business brochure, references of other banks, and financial statements.
- Explain the details to be filled in a loan application form.
- Divide the class into groups. Give each group a loan application form.
- Ask the groups to discuss and fill the form.

### Summarize

- Close the discussion by summarizing the important documents needed for bank loan.
- Ask the participants if they have any questions related to what they have talked about so far.

## 11.6.6: Enterprise Management – An Overview: How to Manage Your Enterprise?

### Unit Objectives

At the end of this unit, participants will be able to:

- Discuss how to manage their own enterprise

### Resources to be Used

- Participant Handbook

### Ask

- Having set-up a business, do you think it is possible to do everything on your own?
- Does one require trained persons for help?
- What does management mean?

### Say

- Let's have a look at this example:

Kapil had a small business that was beginning to pick up pace. He wanted to expand his business, and therefore employed few more people. One day, as he was walking past Ramesh, one of his new employees, he overheard Ramesh talking rudely to a customer on the phone. This set him thinking. Kapil realised that he should have regular team meetings to motivate his employees and speak with them about any problems they might be facing during work. He should also conduct training sessions on new practices, soft skills, and technology, and develop work ethics manual for managing his enterprise.

### Say

- Was Kapil correct in his approach or he should have scolded Ramesh instantly in front of his other employees?
- Discuss “Enterprise Management – An Overview” with the participants as given in the Participant Handbook.

### Say

- Let's learn how to effectively manage an enterprise or business through an activity.

### Team Activity

#### Enterprise Management

- This is a group activity.
- Design a matrix listing the topics and key words that are needed to run an enterprise effectively and smoothly.

#### Activity De-brief

- Have each group present their matrix.
- Encourage participants of the other groups to ask question about each other's presentation.

## Notes for Facilitation

- Checklist of documents is provided as resources for the session.
- You can make some copies and distribute it during the group activity.
- Download sample loan application forms from any nationalised bank's website. Print sufficient copies to circulate it amongst the groups.

<b>CHECKLIST OF DOCUMENTS TO BE SUBMITTED ALONG WITH LOAN APPLICATION (Common for all banks)</b>
1. Audited financial statements of the business concern for the last three years
2. Provisional financial statements for the half – year ended on _____
3. Audited financial statements of associate concern/s for the last three years
4. Copy of QIS II for the previous quarter ended on _____
5. Operational details in Annexure I
6. CMA data for the last three years, estimates for current year and projection for the next year
7. Term loan/DPG requirements in Annexure II
8. List of machinery in respect of machinery offered as security in Annexure III
9. Additional details for export advances furnished in Annexure IV
10. Property statements of all directors/partners/proprietor/guarantors
11. Copies of ITAO of the company for the last three years
12. Copies of ITAOs/WTAOs of the directors/partners/proprietor and guarantors
13. Copies of certificate from banks and financial institutions certifying the latest liability with them
14. Copy of board resolution authorizing the company to apply to your bank for the credit facilities mentioned in application
15. Copy of memorandum and article of association (in case of limited company)/partnership deed (in case of partnership firm)
16. Cash budget for the current year and next year in case of contractors and seasonal industries

Table 10.6.1

## Do

- Instruct the participants that this is group work.
- Divide the class into small groups of 4.
- Give each group a chart paper and coloured pen.
- Tell the participants that they have to make a matrix they need to fill.
- They have to write the main topics and key words that will help them effectively manage their enterprise.
- Give the participants 15 minutes to discuss and write.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

## Summarize

- Ask the participants what they have learned from this exercise/activity.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the importance of effective management to run an enterprise as given in the Participant Handbook.

## 11.6.7: 20 Questions to Ask Yourself before Considering Entrepreneurship

### Unit Objectives

At the end of this unit, participants will be able to:

- List the important questions that every entrepreneur should ask before starting an enterprise

### Resources to be Used

- Participant Handbook
- Blank sheets of paper
- Pens

### Ask

- Why do you want to become an entrepreneur?

### Say

- It is very important to know why you want to become an entrepreneur. Your personal goals for becoming an entrepreneur play a key role in the success of your business. Your goals should be clear well before you start your business.
- Apart from the goals, the other aspects of business that you need to bear in mind are the potential problems that you may face to set-up, your areas of interest, and all the other dimensions of the business.
- Let's understand it better with the help of some questions that every entrepreneur should ask before starting their own business.
- Open the Participant Handbook section named '20 Questions to Ask Yourself Before Considering Entrepreneurship'. You have to answer the questions individually.
- Then, we will have a class discussion on all the questions.

### Do

- Read out the questions one by one in front of all the participants.
- Participants have to answer all the one by one questions.
- Give the class 10-15 minutes to note down their answers.
- At the end of 15 minutes, open the discussion for all the questions.
- Moderate the discussion by focusing on the relevant points.
- Keep a check on time and don't let the discussion get sabotaged or lose track of time. Ensure all the questions are covered and discussed.

### Summarize

- Ask the participants what they have learned from this exercise/activity.
- Ask if they have any questions related to what they have talked about so far.





## Annexure I

### Training Delivery Plan

Training Delivery Plan			
<b>Program Name:</b>	Tyre Retreading Inspection and Buffing Operator		
<b>Qualification Pack Name &amp; Ref. ID</b>	Tyre Retreading Inspection and Buffing Operator - RSC/Q3501		
<b>Version No.</b>	2.0	<b>Version Update Date</b>	2/03/2019
<b>Pre-requisites to Training (if any)</b>	Class VIII <sup>th</sup> passed		
<b>Training Outcomes</b>	<p><b>By the end of this program, the participants will be able to:</b></p> <ol style="list-style-type: none"> <li>1- Prepare tools and machine for inspection and buffing.</li> <li>2- Undertake inspection of tyres.</li> <li>3- Undertake buffing of tyres.</li> <li>4- Carry out housekeeping in rubber product manufacturing.</li> <li>5- Carry out reporting and documentation.</li> <li>6- Carry out quality checks.</li> <li>7- Carry out problem identification and escalation.</li> <li>8- Carry out health and safety.</li> <li>9- Develop entrepreneurship skills.</li> </ol>		

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
1	<b>Introduction to Rubber &amp; Tyre Industry</b>						
1	Introduction to Rubber & Tyre Industry	Introduction to Rubber Industry	<ul style="list-style-type: none"> <li>• Discuss rubber and rubber industry.</li> <li>• Define types of rubber.</li> <li>• Explain about rubber manufacturing processes.</li> <li>• Explain different uses of rubber.</li> <li>• Discuss about various rubber bodies and associations in India.</li> </ul>	Bridge Module	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; Markers</li> <li>• Notes</li> <li>• Laptop/ Slides + Projector</li> <li>• Videos</li> <li>• Samples – RSS sheets, crepe rubber, TSR rubber, synthetic rubber, reclaimed rubber, rubber product – 20 nos.</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
2	Introduction to Rubber & Tyre Industry	Introduction to Rubber Industry	<ul style="list-style-type: none"> <li>Identify rubber raw material type and products made of rubber</li> </ul>	Bridge Module	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Samples – RSS sheets, crepe rubber, TSR rubber, synthetic rubber, reclaimed rubber, rubber product – 20 nos.</li> </ul>	4 Hrs
3	Introduction to Rubber & Tyre Industry	History of Tyre and Tyre Industry in India	<ul style="list-style-type: none"> <li>Discuss the history of tyre development.</li> <li>Explain types of tyre being sold in India.</li> <li>Describe the major tyre brands in India.</li> <li>Describe the ratio of tyre sales in terms of vehicle segment and customer segment.</li> <li>Describe the share of business of all major tyre sellers in India.</li> <li>Identify the tyre type based on tyre construction</li> </ul>	Bridge Module	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Tyre sample with sidewall coding,</li> <li>Tyre cut sections</li> </ul>	4 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
4	Introduction to Rubber & Tyre Industry	Tyre basics	<ul style="list-style-type: none"> <li>• Explain what is tyre.</li> <li>• Describe the constituent material of a tyre.</li> <li>• Explain the parts of tyres.</li> <li>• Define types of tyres being used.</li> <li>• Describe the meaning of sidewall coding of a tyre.</li> <li>• Describe the specification of tyres.</li> </ul>	Bridge Module	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• Tyre sample with sidewall coding,</li> <li>• Tyre cut sections</li> </ul>	8 Hrs
5	Introduction to Rubber & Tyre Industry	Tyre basics	<ul style="list-style-type: none"> <li>• Interpret the meaning of sidewall coding of a tyre.</li> </ul>	Bridge Module	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• Tyre sample with sidewall coding,</li> <li>• Tyre cut sections</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
6	Introduction to Rubber & Tyre Industry	Process of tyre retreading	<ul style="list-style-type: none"> <li>• Explain the complete process of tyre retreading with different options</li> </ul>	Bridge Module	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> </ul>	8 Hrs
7	Introduction to Rubber & Tyre Industry	Equipment used in Tyre Retreading	<ul style="list-style-type: none"> <li>• List the equipment used in tyre retreading process</li> <li>• Explain the details of equipment used in tyre retreading process</li> </ul>	Bridge Module	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• Tyre visual inspection machine</li> <li>• Tyre repair consumables</li> <li>• Stitcher</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
8	Introduction to Rubber & Tyre Industry	Equipment used in Tyre Retreading	<ul style="list-style-type: none"> <li>Describe the process of tyre repairing</li> <li>Describe the working process of tyre curing</li> </ul>	Bridge Module	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Tyre repair consumables</li> <li>Stitcher</li> <li>Curing oven</li> </ul>	8 Hrs
<b>2</b>	<b>Preparation for inspection and buffing</b>						
1	Preparation for inspection and buffing	Tyre inspection machine	<ul style="list-style-type: none"> <li>List major parts of a tyre visual inspection spreader machine.</li> <li>Describe the functions of tyre inspection spreader machine parts.</li> </ul>	RSC/N3501 KB2	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Tyre Inspection machine,</li> <li>Poker,</li> <li>spreader,</li> <li>crayons,</li> <li>old tyres for inspection,</li> <li>hoist,</li> <li>material handling equipment,</li> <li>cleaning equipment</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
2	Preparation for inspection and buffing	Tyre inspection machine	<ul style="list-style-type: none"> <li>Describe working process of tyre inspection spreader machine.</li> </ul>	RSC/N3501 Kb2	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Tyre Inspection machine,</li> <li>Poker,</li> <li>spreader,</li> <li>crayons,</li> <li>old tyres for inspection,</li> <li>hoist,</li> <li>material handling equipment,</li> <li>cleaning equipment</li> </ul>	8 Hrs
3	Preparation for inspection and buffing	Tyre inspection machine	<ul style="list-style-type: none"> <li>Describe working process of a electric spark tyre inspection machine.</li> </ul>	RSC/N3501 KB2	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Shearography tyre test machine,</li> <li>Poker,</li> <li>spreader,</li> <li>crayons,</li> <li>old tyres for inspection,</li> <li>hoist,</li> <li>material handling equipment,</li> <li>cleaning equipment</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
4	Preparation for inspection and buffing	Tyre inspection machine	<ul style="list-style-type: none"> <li>Describe working process of a shearography tyre test machine.</li> </ul>	RSC/N3501 KB2	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Shearography tyre test machine,</li> <li>Poker,</li> <li>spreader,</li> <li>crayons,</li> <li>old tyres for inspection,</li> <li>hoist,</li> <li>material handling equipment,</li> <li>cleaning equipment</li> </ul>	8 Hrs
5	Preparation for inspection and buffing	Tyre buffing machine	<ul style="list-style-type: none"> <li>List major parts of a tyre buffing machine.</li> <li>Describe the functions of tyre buffing machine parts.</li> </ul>	RSC/N3501 KB2	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Tyre buffing machine,</li> <li>inspected tyres for buffing,</li> <li>hoist,</li> <li>material handling equipment,</li> <li>cleaning equipment</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
<b>3. Carry out tyre inspection</b>							
1	Carry out tyre inspection	Tyre inspection machine	<ul style="list-style-type: none"> <li>Describe working process of a tyre buffing machine</li> </ul>	RSC/N3501 KB3	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Tyre buffing machine,</li> <li>Inspected tyres for buffing,</li> <li>Hoist,</li> <li>Material handling equipment,</li> <li>Cleaning equipment</li> </ul>	8 Hrs
2	Carry out tyre inspection	Preparation for inspection & buffing	<ul style="list-style-type: none"> <li>Describe the steps for the tyre inspection machine preparation.</li> <li>State the process of arranging worn tyres for inspection and buffing.</li> <li>Describe the requirement of tyre cleaning for tyre inspection.</li> <li>Explain the process tyre loading in the tyre inspection machine.</li> <li>Describe the preparation steps for tyre buffing machine</li> </ul>	RSC/N3501 PC1, PC2, PC3, PC5, PC6, PC7, PC8, PC9, PC10	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Tyre inspection machine,</li> <li>Poker,</li> <li>Spreader,</li> <li>Crayons,</li> <li>Old tyres for inspection,</li> <li>Hoist,</li> <li>Material handling equipment,</li> <li>Cleaning equipment</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
3	Carry out tyre inspection	Preparation for inspection and buffing	<ul style="list-style-type: none"> <li>• Demonstrate the process of preparing a tyre inspection machine for tyre inspection.</li> </ul>	NA	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• Tyre inspection machine,</li> <li>• Poker,</li> <li>• Spreader,</li> <li>• Crayons,</li> <li>• Old tyres for inspection,</li> <li>• Hoist,</li> <li>• Material handling equipment,</li> <li>• Cleaning equipment</li> </ul>	8 Hrs
4	Carry out tyre inspection	Preparation for inspection & buffing	<ul style="list-style-type: none"> <li>• Demonstrate the process of preparing a tyre buffing machine for tyre buffing..</li> </ul>	RSC/N3501 PC1, PC2, PC4, PC5, PC6, PC7, PC8, PC9, PC10, KB3	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• Tyre inspection machine,</li> <li>• Poker,</li> <li>• Spreader,</li> <li>• Crayons,</li> <li>• Old tyres for inspection,</li> <li>• Hoist,</li> <li>• Material handling equipment,</li> <li>• Cleaning equipment</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
5	Carry out tyre inspection	Initial checks for tyre inspection	<ul style="list-style-type: none"> <li>• Demonstrate the machine check-up points for a tyre visual inspection machine.</li> <li>• Demonstrate the control panel check-up points for tyre visual inspection machine.</li> <li>• Describe importance of tyre visual inspection machine cleaning and maintenance.</li> <li>• Describe general operating instructions for tyre inspection.</li> <li>• Describe preparation points before tyre inspection.</li> <li>• Explain steps involved in tyre inspection.</li> </ul>	RSC/N3502 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• Tyre inspection machine,</li> <li>• Poker,</li> <li>• Spreader,</li> <li>• Crayons,</li> <li>• Old tyres for inspection,</li> <li>• Hoist,</li> <li>• Material handling equipment,</li> <li>• Cleaning equipment</li> </ul>	8 Hrs
6	Carry out tyre inspection	Operating instructions and safety precautions for tyre inspection	<ul style="list-style-type: none"> <li>• Describe the steps for performing the tyre inspection.</li> <li>• Explain the safety precautions to be taken during the tyre inspection.</li> <li>• State Do's and Don'ts for tyre inspection operations.</li> <li>• List responsibilities of a tyre retreading - inspection &amp; buffing operator.</li> </ul>	RSC/N3502 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• Tyre inspection machine,</li> <li>• Poker,</li> <li>• Spreader,</li> <li>• Crayons,</li> <li>• Old tyres for inspection,</li> <li>• Hoist,</li> <li>• Material handling equipment,</li> <li>• Cleaning equipment</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
7	Carry out tyre inspection	Operating instructions and safety precautions for tyre inspection	<ul style="list-style-type: none"> <li>Demonstrate the steps for performing the tyre inspection with the help of a tyre visual inspection machine</li> </ul>	RSC/N3502 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Tyre inspection machine,</li> <li>Poker,</li> <li>Spreader,</li> <li>Crayons,</li> <li>Old tyres for inspection,</li> <li>Hoist,</li> <li>Material handling equipment,</li> <li>Cleaning equipment</li> </ul>	8 Hrs
8	Carry out tyre inspection	Operating instructions and safety precautions for tyre inspection	<ul style="list-style-type: none"> <li>Demonstrate the steps for performing the tyre inspection with the help of a electric spark tyre inspection machine</li> </ul>	RSC/N3502 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Tyre inspection machine,</li> <li>Poker,</li> <li>Spreader,</li> <li>Crayons,</li> <li>Old tyres for inspection,</li> <li>Hoist,</li> <li>Material handling equipment,</li> <li>Cleaning equipment</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
9	Carry out tyre inspection	Operating instructions and safety precautions for tyre inspection	<ul style="list-style-type: none"> <li>• Demonstrate the steps for performing the tyre inspection with the help of a shearography tyre test machine</li> </ul>	RSC/N3502 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• Tyre inspection machine,</li> <li>• Poker,</li> <li>• Spreader,</li> <li>• Crayons,</li> <li>• Old tyres for inspection,</li> <li>• Hoist,</li> <li>• Material handling equipment,</li> <li>• Cleaning equipment</li> </ul>	8 Hrs
<b>4</b>	<b>Carry out tyre buffing</b>						
1	Carry out tyre buffing	Initial checks for tyre buffing	<ul style="list-style-type: none"> <li>• Demonstrate machine check-up points before tyre buffing.</li> <li>• Demonstrate control panel check-up points before tyre buffing.</li> <li>• Discuss the importance of tyre buffing machine cleaning and maintenance.</li> <li>• Describe the general operating instructions before tyre buffing.</li> <li>• Describe preparation points for tyre buffing.</li> <li>• Explain steps involved in tyre buffing.</li> </ul>	RSC/N3503 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• Tyre buffing machine,</li> <li>• Inspected tyres for buffing,</li> <li>• Hoist,</li> <li>• Material handling equipment,</li> <li>• Cleaning equipment</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
			5. Explain tyre Buffing 6. Describe preparation points before Tyre buffing 7. Explain steps involved in Tyre Buffing				
2	Carry out tyre buffing	Operating instructions and safety precautions for tyre buffing	<ul style="list-style-type: none"> <li>List the steps for performing tyre buffing process.</li> <li>Describe the safety precautions to be taken during tyre buffing.</li> <li>Discuss Do's and Don'ts for tyre buffing operations</li> <li>Define responsibilities of a tyre buffing operator</li> </ul>	RSC/N3503 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Tyre buffing machine,</li> <li>Inspected tyres for buffing,</li> <li>Hoist,</li> <li>Material handling equipment,</li> <li>Cleaning equipment</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
3	Carry out tyre buffing	Operating instructions and safety precautions for tyre buffing	<ul style="list-style-type: none"> <li>Demonstrate the steps for performing tyre buffing process with the help of a tyre buffing machine.</li> </ul>	RSC/N3503 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Tyre buffing machine,</li> <li>Inspected tyres for buffing,</li> <li>Hoist,</li> <li>Material handling equipment,</li> <li>Cleaning equipment</li> </ul>	8 Hrs
4	Carry out tyre buffing	Operating instructions and safety precautions for tyre buffing	<ul style="list-style-type: none"> <li>Demonstrate the steps for performing tyre buffing process with the help of a tyre hand buffing machine.</li> </ul>	RSC/N3503 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Tyre buffing machine,</li> <li>Inspected tyres for buffing,</li> <li>Hoist,</li> <li>Material handling equipment,</li> <li>Cleaning equipment</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
<b>5. Housekeeping</b>							
1	Housekeeping	'Need and benefits of housekeeping	<ul style="list-style-type: none"> <li>• Explain what is housekeeping.</li> <li>• Define importance of housekeeping.</li> <li>• Describe purpose of housekeeping.</li> <li>• Explain benefits of housekeeping.</li> <li>• Identify equipment used for housekeeping.</li> </ul>	RSC/N5001 PC1, PC2, PC3, PC10, PC11, PC15, PC16, PC17, PC18, PC19, PC20	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• Cleaning equipment and aids</li> </ul>	8 Hrs
2	Housekeeping	Need and benefits of housekeeping	<ul style="list-style-type: none"> <li>• Demonstrate the workplace cleaning process</li> </ul>	RSC/N5001 PC1, PC2, PC3, PC10, PC11, PC15, PC16, PC17, PC18, PC19, PC20	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• Cleaning equipment and aids</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
3	Housekeeping	'5S' Methodology of housekeeping	<ul style="list-style-type: none"> <li>• Explain what is '5S'.</li> <li>• Define each 'S' and its meaning.</li> </ul>	RSC/N5001	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• Cleaning equipment and aids</li> <li>• 5S check sheet</li> </ul>	8 Hrs
4	Housekeeping	'5S' Methodology of housekeeping	<ul style="list-style-type: none"> <li>• Demonstrate the 1S process at the workplace.</li> <li>• Demonstrate the 2S process at the workplace.</li> </ul>	RSC/N5001	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstra-tions</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• Cleaning equipment and aids</li> <li>• 5S check sheet</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
6.	<b>Reporting and Documentation</b>						
1	Reporting and Documentation	Documentation of day to day activities	<ul style="list-style-type: none"> <li>• Explain what is documentation</li> <li>• Describe the importance of documentation.</li> <li>• Define the purpose of a documentation.</li> <li>• Explain types of documentation.</li> <li>• Describe common documentation used in tyre retreading industry.</li> <li>• Explain what is reporting.</li> <li>• Describe importance of reporting</li> </ul>	RSC/N5002 PC1, PC2, PC3	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• Sample of documentation,</li> <li>• Sample of reports,</li> <li>• Sample of procedure,</li> <li>• Sample of work instructions</li> </ul>	4 Hrs
2	Reporting and Documentation	Organisation Procedure for Reporting and Documentation	<ul style="list-style-type: none"> <li>• Explain about government acts and bylaws</li> <li>• Describe about rules.</li> <li>• Define meaning of policies and guidelines</li> <li>• Describe meaning of procedure</li> <li>• Explain what is work instruction</li> <li>• Discuss organisational Procedures for reporting and documentation</li> <li>• Describe the importance of reporting</li> </ul>	RSC/N5002 PC4, PC5, PC6, PC7	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• Sample of documentations,</li> <li>• Sample of reports,</li> <li>• Sample of procedure,</li> <li>• Sample of work instructions</li> </ul>	4 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
3	Reporting and Documentation	Communication in an Organisation	<ul style="list-style-type: none"> <li>Define what is communication.</li> <li>Describe the communication process.</li> <li>Explain problems in communication.</li> <li>Describe various communication barriers.</li> <li>Explain traits of Active Listening.</li> <li>Discuss points of good writing skill.</li> </ul>	RSC/N5002 SA10, SA11	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> </ul>	8 Hrs
4	Reporting and Documentation	Communication in an Organisation	<ul style="list-style-type: none"> <li>Define what is communication.</li> <li>Describe communication process.</li> <li>Explain problems in communication.</li> <li>Describe various communication barriers.</li> <li>Explain traits of Active Listening.</li> <li>Discuss points of good writing skill.</li> </ul>	RSC/N5002 SA10, SA11	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
5	Reporting and Documentation	Work Management	<ul style="list-style-type: none"> <li>Decide priority of work required to be done.</li> <li>Describe how to select work to do from pending work.</li> </ul>	RSC/N5002 PC6, KA3	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> </ul>	8 Hrs
<b>7. Carry Out Quality Checks</b>							
1	Carrying out Quality Checks	Carrying out Quality Checks	<ul style="list-style-type: none"> <li>Describe the need of quality control in tyre inspection and buffing</li> <li>Define the potential quality defects generated in a retreaded tyre</li> <li>State the process of quality assurance in tyre retreading.</li> <li>Explain the process of quality control of input material used for retreading</li> </ul>	RSC/N5003 PC1, PC2, PC3, PC4, PC7	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Tyre visual inspection machine,</li> <li>Material handling equipment,</li> <li>Cleaning equipment</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
2	Carrying out Quality Checks	Carrying out Quality Checks	<ul style="list-style-type: none"> <li>List the instructions for retreading process control.</li> <li>Discuss methodology of problem solving techniques</li> <li>Describe implication of tyre defects.</li> </ul>	RSC/N5003 PC1, PC2, PC3, PC4, PC7	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Tyre visual inspection machine,</li> <li>Material handling equipment,</li> <li>Cleaning equipment</li> </ul>	8 Hrs
3	Carrying out Quality Checks	Carrying out Quality Checks	<ul style="list-style-type: none"> <li>Demonstrate the identification of retreading quality defects in a retreaded tyre.</li> </ul>	RSC/N5003 PC1	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>Tyre visual inspection machine,</li> <li>material handling equipment,</li> <li>Cleaning equipment</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
4	Carrying out Quality Checks	Carrying out Quality Checks	<ul style="list-style-type: none"> <li>• Demonstrate the problem solving technique - fish bone diagram.</li> <li>• Demonstrate the problem solving technique - why-why analysis.</li> </ul>	RSC/N5003 PC4	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• Tyre visual inspection machine,</li> <li>• material handling equipment,</li> <li>• Cleaning equipment</li> </ul>	8 Hrs
<b>7. Problem Identification and Escalation</b>							
1	Problem Identification And Escalation	Problem Identification and Escalation to Supervisor	<ul style="list-style-type: none"> <li>• Explain what is a problem.</li> <li>• Describe how to identify a problem.</li> <li>• Define hierarchies.</li> <li>• Discuss hierarchy in Industry.</li> <li>• Explain how to escalate problem.</li> <li>• Describe need for escalation..</li> </ul>	RSC/N5004 Pc1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC21, PC22, PC23, Pc24	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
<b>9. Health &amp; Safety</b>							
1	Health & Safety	Hazards In Rubber Industry	<ul style="list-style-type: none"> <li>• Explain what is hazard.</li> <li>• Identify hazard in tyre retreading industry.</li> <li>• Describe chemical hazard.</li> <li>• Describe physical hazard.</li> <li>• Describe ergonomic hazard.</li> </ul>	RSC/N5007 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> </ul>	8 Hrs
2	Health & Safety	Health and Safety Requirements For A Rubber Industry	<ul style="list-style-type: none"> <li>• Explain the health and safety requirements for tyre industry.</li> <li>• Discuss health and safety procedure of organisation.</li> <li>• Identify safety risks in tyre retreading</li> </ul>	RSC/N5007 PC11, PC12, PC13, PC4, PC5, PC6, PC7, PC8, PC9	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• First aid kit,</li> <li>• Sample of PPEs – safety goggle, safety shoes, safety gloves, mask, earmuff,</li> <li>• Fire extinguisher</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
3	Health & Safety	Industrial Safety Equipment	<ul style="list-style-type: none"> <li>• Explain what is PPEs.</li> <li>• Discuss requirement of PPE.</li> <li>• Identify different types of PPEs used in rubber and tyre retreading industry.</li> <li>• Describe the purpose of various PPEs used in rubber and tyre retreading industry.</li> <li>• Demonstrate the use of different PPEs.</li> </ul>	RSC/N5007 PC17, PC28, KB12	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• First aid kit,</li> <li>• Sample of PPEs – safety goggle, safety shoes, safety gloves, mask, earmuff,</li> <li>• Fire extinguisher</li> </ul>	8 Hrs
4	Health & Safety	Handling Fire and other Emergencies	<ul style="list-style-type: none"> <li>• Define what is emergency.</li> <li>• Describe various emergency situations in Industry.</li> <li>• Describe common injuries in industry.</li> <li>• Describe first aid box and its constituents.</li> <li>• Demonstrate how to handle fire emergencies.</li> <li>• Demonstrate how to use a multi purpose Fire Extinguisher.</li> <li>• Describe type and class of Fires.</li> </ul>	RSC/N5007 PC23, PC24, PC25	<ul style="list-style-type: none"> <li>• Facilitator led discussions</li> <li>• Question &amp; answer sessions</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>• White board &amp; markers</li> <li>• Notes</li> <li>• Laptop/ Slides + projector</li> <li>• Videos</li> <li>• First aid kit,</li> <li>• Sample of PPEs – safety goggle, safety shoes, safety gloves, mask, earmuff,</li> <li>• Fire extinguisher</li> </ul>	8 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
5	Health & Safety	Handling Fire and other Emergencies	<ul style="list-style-type: none"> <li>Demonstrate the common first aid process</li> </ul>	RSC/N5007 PC23, PC24, PC25	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>First aid kit</li> </ul>	8 Hrs
6	Health & Safety	Handling Fire and other Emergencies	<ul style="list-style-type: none"> <li>Demonstrate the fire extinguisher using process</li> </ul>	RSC/N5007 PC23, PC24, PC25	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; markers</li> <li>Notes</li> <li>Laptop/ Slides + projector</li> <li>Videos</li> <li>First aid kit,</li> <li>Sample of PPEs – safety goggles, safety shoes, safety gloves, mask, earmuff,</li> <li>Fire extinguisher</li> </ul>	6 Hrs

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
<b>10</b>	<b>Creating Business Skills</b>						
1	Creating Business Skills	Creating Business Skills for Own Business	<ul style="list-style-type: none"> <li>Define the concept of business opportunity.</li> <li>Explain the ways of identifying opportunities.</li> <li>List the methods for improving current business.</li> </ul>	RSC/N5013 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; Markers</li> <li>Notes</li> <li>Laptop/Slides + Projector</li> <li>Videos</li> </ul>	4 Hrs
2	Creating Business Skills	Creating Business Skills for Own Business	<ul style="list-style-type: none"> <li>Explain the concept of VAVE.</li> <li>List the requirements for creating a business enterprise.</li> <li>Outline the risk involved in any type of business.</li> <li>Name different types of business entities available in India</li> </ul>	RSC/N5013 PC9, PC10, PC11, PC12, PC15, PC17	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; Markers</li> <li>Notes</li> <li>Laptop/Slides + Projector</li> <li>Videos</li> </ul>	4 Hrs
3	Creating Business Skills	Creating Business Skills for Own Business	<ul style="list-style-type: none"> <li>Demonstrate the process of creating a business plan for tyre retreading business</li> </ul>	RSC/N5013 PC11	<ul style="list-style-type: none"> <li>Facilitator led discussions</li> <li>Question &amp; answer sessions</li> <li>Videos</li> <li>Demonstrations</li> <li>Practical activities</li> </ul>	<ul style="list-style-type: none"> <li>White board &amp; Markers</li> <li>Notes</li> <li>Laptop/Slides + Projector</li> <li>Videos</li> </ul>	6 Hrs

## Annexure II

## Assessment Criteria

## CRITERIA FOR ASSESSMENT OF TRAINEES

<b>Assessment Criteria for Assistant Beauty Therapist</b>	
<b>Job Role</b>	<b>Tyre Retreading Inspection and Buffing Operator</b>
<b>Qualification Pack</b>	<b>RSC/Q3501</b>
<b>Sector Skill Council</b>	<b>Rubber Skill Development Council</b>

Sr No.	Guidelines for Assessment
1.	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down the proportion of marks for Theory and Skills Practical for each PC.
2.	The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3.	Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4.	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5.	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
6.	To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
7.	In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Assessable Outcomes	Assessment Criteria (PC)	Total Marks	Out of	Theory	Practical Skills
<b>RSC/N3501 Prepare tools and machine for inspection and buffing</b>	PC1. Ensure the availability of all required tools for inspection and buffing		12	6	6
	PC2. Ensure that the tools are clean and in ready to use condition		9	5	4
	PC3. Ensure adequate light in the inspection area		11	5	6
	PC4. Prepare automatic buffing machine		11	4	7
	PC5. Place the tools on a safe location		12	5	7
	PC6. Clean the inspecting table		12	5	7
	PC7. Put all tyres to be inspected in one row size wise		12	5	7
	PC8. Ensure the use of certified/tested inspection tools and check their functioning		11	5	6
	PC9. Adhere to all safety norms (such as wearing protective gloves and shoes).		5	5	0
	PC10. Comply with health, safety, environment guidelines and regulations in accordance with international/national standards or the organizational standards.		5	5	0
		<b>Total</b>	<b>100</b>	<b>50</b>	<b>50</b>

<b>RSC /N3502 Undertake inspection of tyres</b>	PC1. Put hand glove and pick up one tyre for inspection	<b>100</b>	7	3	4
	PC2. See tyre to be re-treaded on visually from outside and all 360 Degree		7	3	4
	PC3. Roll the tyre on the ground and check for defect like – bead for any damaged , sidewall for any crack , any sidewall hole , tread damaged , severe cut of tread , exposed fabric and all other as per company SOP		7	3	4
	PC4. In case differentiate useable or reject based on SOP and mark portion need repair with marker / crayon		7	3	4
	PC5. In case tyre is not suitable for re tread –put REJECT mark		3	1	2
	PC6. Lift the tyre using hoist and put on roller type inspection table which has lamp / light attached		6	3	3
	PC7. This inspection is for inside the carcass		3	1	2
	PC8. Spread bead apart using spreader		6	3	3
	PC9. With the help of lamp / light see the condition of inside portion of the tyre		5	3	2
	PC10. Check for any though hole , already repaired , loose cord, nail is present or penetrated though and all other as per SOP		7	3	4
	PC11. Tyre has to rotated and it has be check circumferentially		6	2	4
	PC12. Use marker / crayon mark to mark any observation on inside inspection also		5	3	2
	PC13. Use poker to make sure any FM is embed are removed/ cut		7	3	4
	PC14. Remove spreader		6	3	3
	PC15. Unload tyre with the help of Hoist from inspection table		5	3	2
	PC16. Keep in OK line if it is OK or in separate line of “REJECTED “ line with proper marking		5	3	2
	PC17. Handle the material using hand gloves and other safety equipment.		4	3	1
	PC18. Adhere to all safety norms (such as wearing protective gloves and shoes, safety mask etc.)		2	2	0
	PC19. Comply with health, safety, environment guidelines and regulations in accordance with international/national standards or the organizational standards.		2	2	0
	<b>Total</b>	<b>100</b>	<b>50</b>	<b>50</b>	
	PC1. Put inspected tyres /size wise to be buffed in one row		5	4	1
	PC2. Check tyre to be re- treaded on visually from outside and all 360 Degree		5	4	1

<b>RSC /N3503 Undertake inspection of tyres</b>	PC3. Roll the tyre on the ground and check for defect like – bead for any damaged , sidewall for any crack , any sidewall hole , tread damaged , severe cut of tread, exposed fabric and all other as per company SOP	5	4	1	
	PC4. Check if tyre has any mark with crayon or other marker so that all precaution can be taken before performing buffing operation	5	4	1	
	PC5. Lift the tyre from one bead side using hoist and put on roller type buffing roller / table which has lamp / light attached	4	2	2	
	PC6. Mark tread portion with marker – guideline for buffer to cut tread manually as per SOP	4	2	2	
	PC7. Hold the tyre and start chipping top tread slowly – slowly	4	2	2	
	PC8. Continue this operation all round with eye measurement and keeping left out portion ( called under depth / under tread )	4	2	2	
	PC9. Be careful not to go upto Fabric / reinforcement material is visible –it should just above fabric	4	2	2	
	PC10. Remove rubber tread portion full width of TREAD only	4	2	2	
	PC11. Take buffing stone in hand ( it is rotating/ RPM with high speed)	4	2	2	
	PC12. Hold buffing toll by both hand in such a way that it should not have slippage while buffing as it need some human rated pressure	4	2	2	
	PC13. Start buffing uneven hand cut left out tread portion uniformly from one end to another end and circumferentially	4	2	2	
	PC14. Extra care must be taken wherever defect / mark is given by carcass inspecting inspector	4	2	2	
	PC15. With the help of lamp / light see the condition of inside portion of the tyre	4	2	2	
	PC16. Make carcass top surface rough with teathed grinder	4	2	2	
	PC17. Clean manually and remove all lose dust rubber particle with the help of brush / by blowing air blast	4	2	2	
	PC18. Once again check tyre circumferentially for any non - uniformity on buffing	4	2	2	
	PC19. Unload tyre with the help of Hoist/ table	4	2	2	
	PC20. Mark OK mark on tyre and keep in OK row for next operation	4	2	2	
	PC21. In case tyre is not suitable for re tread –put REJECT mark	3	2	1	
	PC22. Handle the material using hand gloves and other safety equipment.	3	2	1	
	PC23. Use all protecting measure like Eye goggle , nose mask etc are very important to put before this operation	3	2	1	
	PC24. Carefully handle Buffing shaft with grinder / tool which has sharp teeth	3	2	1	
	PC25. Adhere to all safety norms (such as wearing protective gloves and shoes, safety mask etc)	2	2	0	
	PC26. Comply with health, safety, environment guidelines and regulations in accordance with international/national standards or the organizational standards.	2	2	0	
		<b>Total</b>	<b>100</b>	<b>60</b>	<b>40</b>

<b>RSC/N5001</b> <b>Carry out housekeeping in rubber product manufacturing</b>	PC1. Inspect the area while taking into account various surfaces	<b>100</b>	3	3	0
	PC2. Identify the material requirements for cleaning the areas inspected, by considering risk, time, efficiency and type of stain		3	3	0
	PC3. Ensure that the cleaning equipment is in proper working condition		3	3	0
	PC4. Select the suitable alternatives for cleaning the areas in case the appropriate equipment and materials are not available and inform the appropriate person		3	3	0
	PC5. Plan the sequence for cleaning the area to avoid re-soiling clean areas and surfaces		3	3	0
	PC6. Inform the affected people about the cleaning activity		2	2	0
	PC7. Display the appropriate signage for the work being conducted		3	3	0
	PC8. Ensure that there is adequate ventilation for the work being carried out		3	3	0
	PC9. Wear the personal protective equipment required for the cleaning method and materials being used		3	3	0
	PC10. Use the correct cleaning method for the work area, type of soiling and surface		3	3	0
	PC11. Carry out cleaning activity without disturbing others		3	3	0
	PC12. Deal with accidental damage, if any, caused while carrying out the work		3	3	0
	PC13. Report to the appropriate person any difficulties in carrying out your work		3	3	0
	PC14. Identify and report to the appropriate person any additional cleaning required that is outside one's responsibility or skill		3	3	0
	PC5. Ensure that there is no oily substance on the floor to avoid slippage		9	6	3
	PC16. Ensure that no scrap material is lying around		9	6	3
	PC17. Maintain and store housekeeping equipment and supplies		3	3	0
	PC18. Follow workplace procedures to deal with any accidental damage caused during the cleaning process		3	3	0
	PC19. Ensure that, on completion of the work, the area is left clean and dry and meets requirements		8	2	6
	PC20. Return the equipment, materials and personal protective equipment that were used in the right places making sure they are clean, safe and securely stored		3	3	0
	PC21. Dispose the waste garnered from the activity in an appropriate manner		9	3	6
	PC22. Dispose of used and un-used solutions according to manufacturer's instructions, and clean the equipment thoroughly		9	3	6
	PC23. Maintain schedules and records for housekeeping duty		3	3	0
	PC24. Replenish any necessary supplies or consumables		3	3	0
	<b>Total</b>	<b>100</b>	<b>60</b>	<b>40</b>	

<b>RSC/N5002 Carry out Reporting and Documentat- ion</b>	PC1. Report data/problems/incidents as applicable in a timely manner	<b>100</b>	12	8	4
	PC2. Report to the appropriate authority as laid down by the company		12	8	4
	PC3. Follow reporting procedures as prescribed by the company		12	8	4
	PC4. Identify documentation to be completed relating to one's role		10	6	4
	PC5. Record details accurately an appropriate format		16	6	10
	PC6. Complete all documentation within stipulated time according to company procedure		14	4	10
	PC7. Ensure that the final document meets the requirements of the persons who requested it or make any amendments accordingly		6	4	2
	PC8. Ensure documents are available to all appropriate authorities to inspect		6	4	2
	PC9. Respond to requests for information in an appropriate manner while following organizational procedures		6	6	0
	PC10. Inform the appropriate authority of requests for information received		6	6	0
	<b>Total</b>	<b>100</b>	<b>60</b>	<b>40</b>	
<b>RSC/N5003 Carry Out Quality Checks</b>	PC1. Ensure that total range of checks are regularly and consistently performed		24	10	14
	PC2. Use appropriate measuring instruments, equipment, tools, accessories etc ,as required		24	10	14
	PC3. Identify non-conformities to quality assurance standards		6	4	2
	PC4. Identify potential causes of non-conformities to quality assurance standards		5	3	2
	PC5. Identify impact on a final product due to non-conformance to company standards		5	3	2
	PC6. Evaluating the need for action to ensure that problems do not recur		6	4	2
	PC7. Suggest corrective action to address the problem		5	3	2
	PC8. Review effectiveness of corrective action		5	3	2
	PC9. Interpret the results of the quality check correctly		4	4	0
	PC10. Take up results of the findings with QC in charge / appropriate authority.		3	3	0
	PC11. Take up the results of the findings within the stipulated time.		3	3	0
	PC12. Record of results of action taken		3	3	0
	PC13. Record adjustments not covered by established procedures for future reference		3	3	0

	PC14. Review effectiveness of action taken		2	2	0
	PC15. Follow reporting procedures where the cause of the defect cannot be identified		2	2	0
		<b>Total</b>	<b>100</b>	<b>60</b>	<b>40</b>
<b>RSC/N5004 To Carry Out Problem Identification and Escalation</b>	PC1. Identify defects/indicators of problems	<b>100</b>	7	4	3
	PC2. Identify any wrong practices that may lead to problems		6	3	3
	PC3. Identify practices that may impact the final product quality		6	3	3
	PC4. Identify if the problem has occurred before		5	3	2
	PC5. Identify other operations that might be impacted by the problem		6	4	2
	PC6. Ensure that no delays are caused as a result of failure to escalate problems		5	3	2
	PC7. Take appropriate materials and sample, conduct tests and evaluate results to establish reasons to confirm suspected reasons for non-conformance (where required)		8	5	3
	PC8. Consider possible reasons for identification of problems		8	5	3
	PC9. Consider applicable corrections and formulate corrective action		3	3	0
	PC10. Formulate action in a timely manner		3	3	0
	PC11. Communicate problem/remedial action to appropriate parties		7	5	2
	PC12. Take corrective action in a timely manner		2	2	0
	PC13. Take corrective action for problems identified according to the company procedures		2	2	0
	PC14. Report/document problem and corrective action in an appropriate manner		8	5	3
	PC15. Monitor corrective action		2	2	0
	PC16. Evaluate implementation of corrective action taken to determine if the problem has been resolved		2	2	0
	PC17. Ensure that corrective action selected is viable and practical		2	2	0
	PC18. Ensure that correct solution is identified to an identified problem		2	2	0
	PC19. Take corrective action for problems identified according to the company procedures		1	1	0
	PC20. Ensure that no delays are caused as a result of failure to take necessary action		1	1	0
	PC21. Escalate problem as per laid down escalation matrix .		4	3	1
	PC22. Escalate the problem within the stipulated time		4	3	1
	PC23. Escalate the problem in an appropriate manner		3	2	1
	PC24. Ensure that no delays are caused as a result of failure to escalate problems		3	2	1
		<b>Total</b>	<b>100</b>	<b>70</b>	<b>30</b>

<b>RSC/ N5007</b> <b>Carry out health and safety</b>	PC1. Undertake basic safety checks before operation of all machinery and equipment and report hazards to the appropriate supervisor	6	4	2
	PC2. Work for which protective clothing or equipment is required is identified, and the appropriate protective clothing or equipment is used in performing these duties in accordance with workplace policy.	6	4	2
	PC3. Read and understand the hazards of use and contamination mentioned on the labels of chemicals, utilities, etc	0	0	0
	PC4. Prior to performing manual handling jobs, the risk is assessed, and work is carried out according to currently recommended safe practices.	6	4	2
	PC5. Use equipment and materials safely and correctly and return the same to designated storage when not in use	3	2	1
	PC6. Dispose off waste safely and correctly in a designated area	6	4	2
	PC7. Risks to bystanders are recognized, and action taken to reduce risk associated with jobs in the workplace	0	0	0
	PC8. Perform work in a manner which minimizes environmental damage	0	0	0
	PC9. All procedures and work instructions for controlling risk are followed closely.	0	0	0
	PC10. Report any accidents, incidents or problems without delay to an appropriate person and take immediate necessary action to reduce the further danger.	0	0	0
	PC11. Follow procedures for dealing with accidents, fires, and emergencies, including communicating location and directions to emergency.	6	4	2
	PC12. Follow emergency procedures as per company standards and workplace requirements.	8	5	3
	PC13. Use Emergency equipment in accordance with manufacturers' specifications and workplace requirements.	8	5	3
	PC14. Provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques.	0	0	0
	PC15. Recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipment as appropriate	0	0	0
	PC16. Dispose off medical waste in accordance with workplace requirements	0	0	0
	PC17. Report details of first aid administered in accordance with workplace procedures.	7	4	3
	PC18. Comply with general safety procedures	8	4	4
	PC 19. Follow standard safety procedures while handling equipment, hazardous material or tool	0	0	0
	PC20. Check parts of the workplace and take preventive actions like spraying and other steps to protect from leakages, water logging, pests, fire, pollution, etc.	8	5	3

	PC21. Ensure no accidents and damages in the workplace, reporting of any breach of company safety procedure		0	0	0
	PC22. Keep the workplace organized, swept, clean and hazard free		8	5	3
	PC23. Attend fire drills and other safety-related workshops organized at the workplace		4	2	2
	PC24. Be aware of first aid, evacuation and emergency procedures		4	2	2
	PC25. Be alert to any events and do not be negligent to any safety procedures to be followed		0	0	0
	PC26. Avoid accidents while using hazardous chemicals, machines, sharp tools and equipment		4	2	2
	PC27. Use safety materials such as protective gear, goggles, caps, shoes, etc. (as applicable to the workplace)		4	2	2
	PC28. Handle heavy and hazardous materials with care and using appropriate tools and handling equipment such as trolleys, ladders		4	2	2
		<b>Total</b>	<b>100</b>	<b>60</b>	<b>40</b>
<b>RSC/N5013 Develop entrepreneur- ship skills</b>	PC1. Create an Awareness to identify profitable business opportunity (Opportunity can be in the form of new material in use, new process, new technology, new market etc)		7	4	3
	PC2. Maintain the confidentiality till the completion of working on the idea		0	0	0
	PC3. Discuss the opportunity (with trusted ones) to evaluate its feasibility		7	4	3
	PC4. Arrange/organize related documents/information		0	0	0
	PC5. Monitor the development at competitors' end		7	4	3
	PC6. Sustain existing business and make continual improvements		7	4	3
	PC7. Evaluate possibilities of process simplification, combining process steps (wherever applicable), reducing manpower dependency		0	0	0
	PC8. Acquire new information for optimal allocation of resources before others to gain profit		0	0	0
	PC9. Understanding the requirement of different factors of production: land, labour and capital		5	3	2
	PC10. Acquire and deploy necessary resources for exploitation of identified business opportunity		0	0	0
	PC11. Develop a business plan		0	0	0
	PC12. Acquire financial and material resources		5	3	2
	PC13. Organize to hire experienced and efficient human resource		0	0	0
	PC14. Arrange for best factory set up		5	3	2
	PC15. Raise capital from different sources keeping the interest cost at minimum		6	3	3

	PC16. Arrange for purchase, effective utilization and management of the resources	<b>100</b>	0	0	0
	PC17. Assume risk and deal with uncertainty		5	3	2
	PC18. Take initiative to start something new (process, product etc.)		5	3	2
	PC19. Convert new idea into successful innovation		5	3	2
	PC20. Replace in whole or in part inferior offerings creating new products/business model		5	3	2
	PC21. Develop new combinations of existing inputs to be more competitive work towards cost reduction through efficiency, improvement in quality, bring in new product/features of product.		10	6	4
	PC22.Acquire semi or fully automatic units for improved productivity		3	3	0
	PC23. Collection and recording of all information		3	2	1
	PC24. Compilation, analysis and documentation		3	2	1
	PC25. Maintain correspondence with vendors, clients, govt. agencies and public		0	0	0
	PC26.Document notifications/letters from Government agencies and management		3	3	0
<b>Total</b>				<b>100</b>	<b>60</b>
<b>Grand Total</b>		<b>900</b>	<b>900</b>	<b>540</b>	<b>360</b>
<b>Percentage Weightage:</b>				<b>60%</b>	<b>40%</b>
<b>Minimum Pass% to Qualify :</b>				<b>60%</b>	







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