



Skill India
कौशल भारत - कुशल भारत



सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

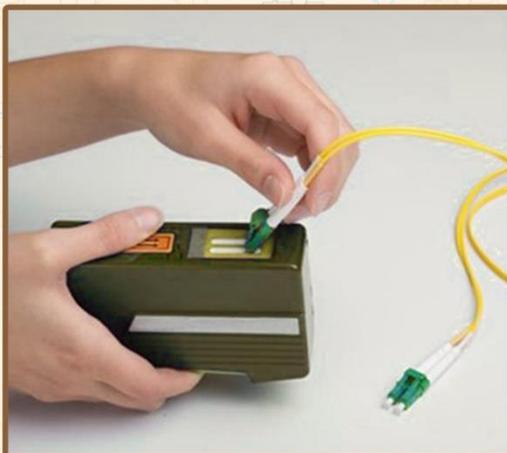


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National
Skill Development
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Transforming the skill landscape



Facilitator Guide



Sector
Telecom

Sub-Sector
Network Managed Services

Occupation
Network Operations & Maintenance – Optical

Reference ID: **TEL/Q6400, Version 1.0**
NSFQ Level: **3**

Optical Fibre Splicer

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Telecom Sector Skills Council

2nd Floor. Plot No: 105,
Sector-44, Gurgaon-122003
Ph.: 0124- 4148029, 4375891
Web: <http://www.tsscindia.com>

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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. ”

Acknowledgements

Telecom Sector Skill Council would like to express its gratitude to all the individuals and institutions who contributed in different ways towards the preparation of this “Facilitator Guide”. Without their contribution it could not have been completed. Special thanks are extended to those who collaborated in the preparation of its different modules. Sincere appreciation is also extended to all who provided peer review for these modules.

The preparation of this manual would not have been possible without the Telecom Industry's support. Industry feedback has been extremely encouraging from inception to conclusion and it is with their input that we have tried to bridge the skill gaps existing today in the Industry.

This facilitator guide is dedicated to the aspiring youth who desire to achieve special skills which will be a lifelong asset for their future endeavours.

About this Guide

In the last five years, the growth of the Indian telecommunications sector has outpaced the overall economic growth. This sector is poised for strong growth of about 10.3 by 2020, driven by growth in organized retail, technological advancements, changing consumer preferences and government support. With over 1000 million subscribers, India is the second largest telecom market in the world. The sector currently employs over 2.08 million employees and is slated to employ more than 4.16 million employees by 2022. This implies additional creation of ~2.1 million jobs in the nine-year period.

This Participant book is designed to impart theoretical and practical skill training to students for becoming an Optical Fibre Splicer. Optical Fibre Splicer is responsible for ensuring efficient splicing of optical fibre cables and supports in optical fibre installation and in carrying out fibre testing using Optical Time Domain Reflectometer (OTDR) and power meter.

This Trainee Manual is based on Optical Fibre Splicer Qualification Pack (TEL/Q6400) & includes the following National Occupational Standards (NOSs)

1. Undertake splicing of optical fibre
2. Installation & commissioning of Optical fibre cables (OFC)

The Key Learning Outcomes and the skills gained by the participant are defined in their respective units.

Post this training, the participant will be able to do splicing of the optical fibre cables and will be able to supports in optical fibre installation.

We hope that this Trainee Manual will provide a sound learning support to our young friends to build an attractive career in the telecom industry.

Symbols Used

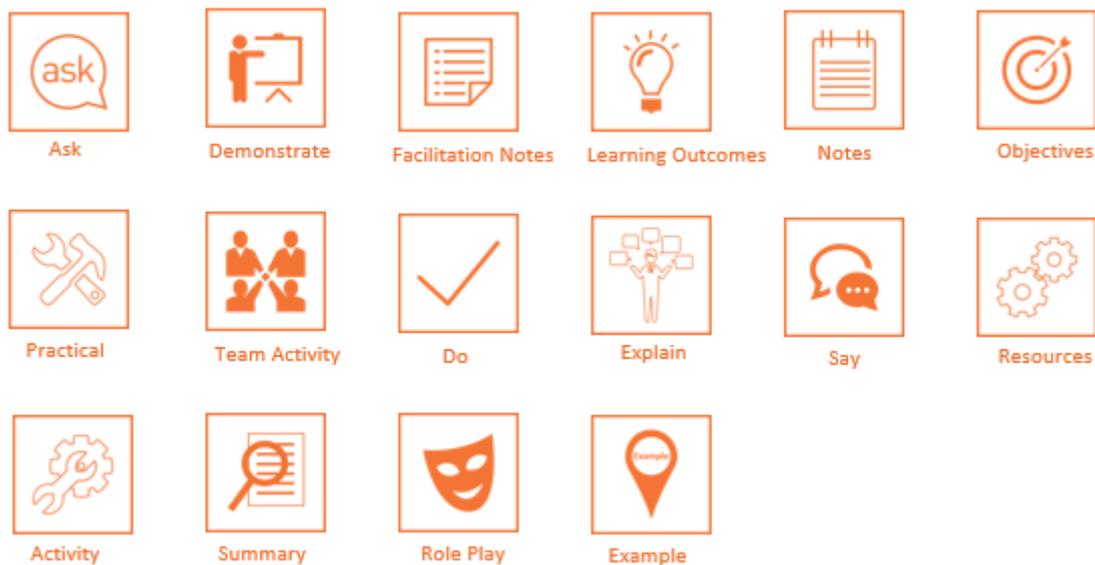


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Key Learning Outcomes

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

1. Explain the growth and opportunities in the broadband industry
2. Explain the attributes, job description and key responsible areas (KRA) of an 'optical fibre splicer'
3. Explain the functioning of public switched telephone network (PSTN)
4. Identify the various media of transmission
5. Describe important telecom terminologies

UNIT 1.1: About Telecom and Optical Fibre

Unit Objectives

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

1. Explain and outline the growth and opportunities in the broadband industry
2. Explain and outline the attributes, job description and key responsible areas of 'optical fibre technician'
3. Explain and outline the functioning of public switched telephone network
4. Identify and describe various media of transmission
5. Describe important telecom terminologies

Resources to be Used

- Available objects such as a duster, pen, notebook, projector and other teaching aids
- Presentation slides
- Multimedia
- Coaxial cables, twisted paired cables, and optical fibre cables

Say

Good morning and warm welcome to the training program on Optical Fibre Splicer. Let us start the unit by discussing what are optical fibres and the duties and responsibilities of an optical fibre splicer.

Ask

Ask the participants whether they know about the growth of broadband industry.

Notes for Facilitation

- Start the session by telling the participants about the impact of the telecommunications industry on the social and economic development of India.
- Tell them that communication plays a very important role in the human life.
- Tell them that starting from delivering messages by hand to using telephone to communicate and to the current use of smart phones and Internet, the telecommunication industry has undergone an incredible revolution.

- The following figure illustrates the impact of the broadband industry on various sectors in India:

Furthered socio-economic growth as more and more parts of India got connected

Boosted the Gross Domestic Product (GDP) of the country

Created millions of direct and indirect jobs

Bridged last mile connectivity in public services

Revolutionized mobile commerce

Provided access to education in remote areas

Brought health care facilities to remote areas

Fig 1.1.1: Impact of the broadband industry

Ask

Ask the participants whether they know about the duties and responsibilities of an optical fibre splicer.

Ask the participants whether they know some application and advantages of optical fibre technology

Notes for Facilitation

- Explain to the participants that a good optical fibre splicer should possess the following attributes:
 - Patience
 - Integrity
 - Punctuality
 - Critical thinking
 - Amenable behaviour
 - Good interpersonal relationship building
- Explain to them about the responsibilities of an optical fibre splicer.
- Tell the participants about the full scope of work of an optical fibre splicer.

- Tell them that the following practices are also a part of their job responsibilities:

Use devices such as cleaver, Optical Time Domain Reflectometer, and fibre identifier

Ensure compatibility and safety of system

Ensure conformance to telecom and safety codes

Maintain records and files

Fig. 1.1.2: Responsibilities of an optical fibre splicer

- Explain the importance of having thorough knowledge of the various optical components used in their job role.
- Explain the various technical skills they must possess to do their job efficiently and effectively.
- Explain that in addition to these technical skills, they must also have certain practical skills such as shown in the following figure:

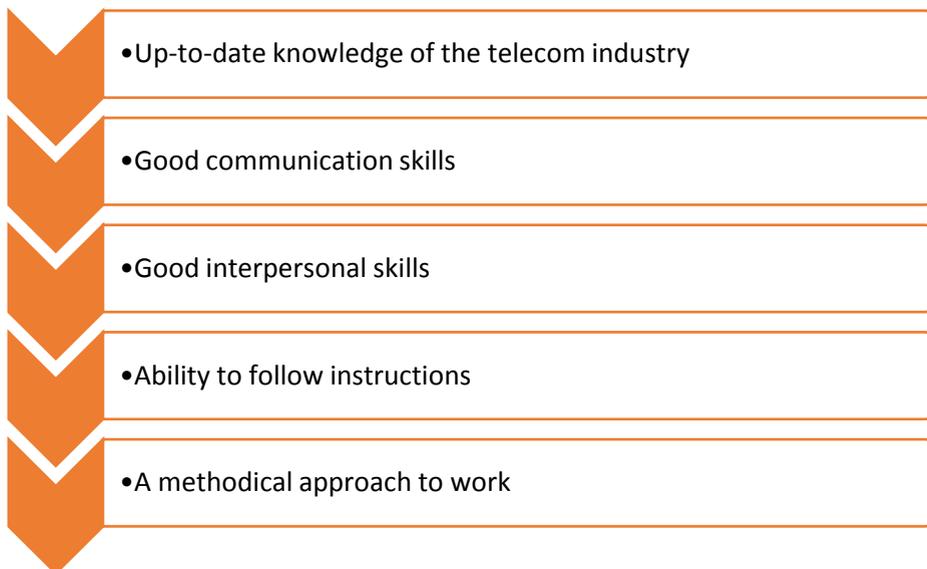


Fig. 1.1.3: Practical skills

Ask

Ask the participants whether they know the full form of PSTN.

Notes for Facilitation

- Tell them that PSTN stands for Public Switched Telephone Network.
- Explain to the participants the PSTN refers to the traditional circuit-switched telephone network was used generally since the late 1800s.
- Tell them that it is the basic service that uses copper phone lines to transmit analogue voice data.
- It consists of a collection of individual telephone lines that are hardwired to a public exchange.
- Tell them that there are four major elements of PSTN, and they are:

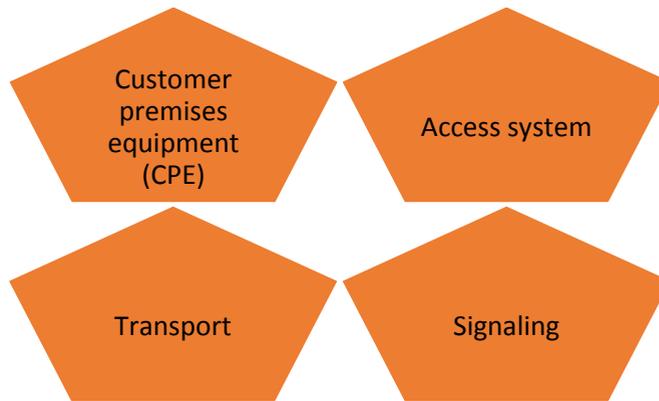


Fig 1.1.4: Elements of PSTN

- Explain the working of PSTN phone lines with the help of following figure:

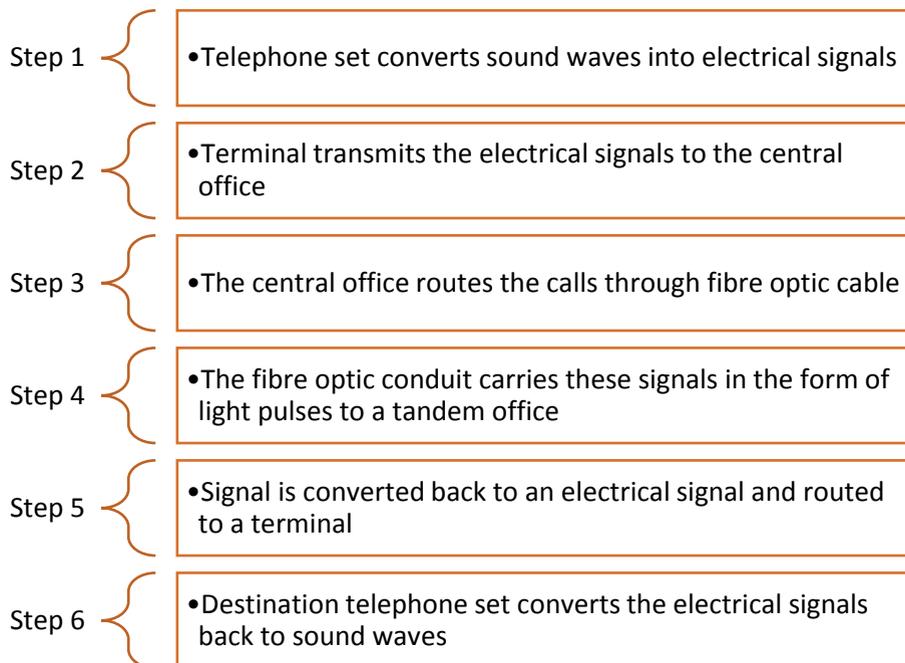


Fig 1.1.5: Working of PSTN

Ask

Ask the participants whether they know about the various types of transmission media.

Demonstrate

- Show the participants the different types of cables.

Notes for Facilitation

- Tell them that the transmission media refers to the path or the channel used to carry a communication signal from one system to another.
- Tell them that transmission media is of following types:

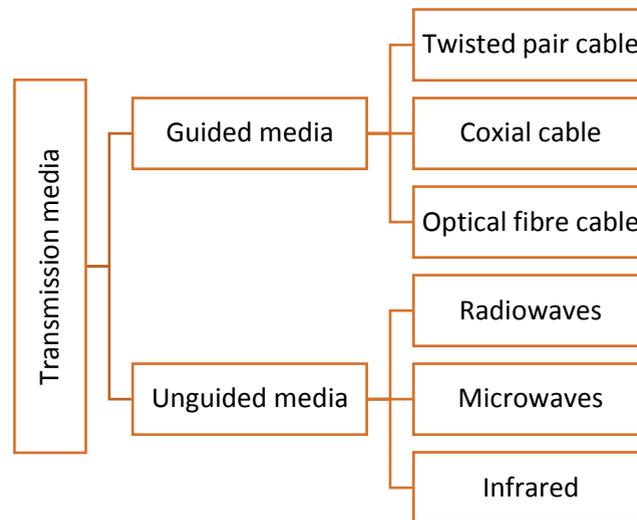


Fig 1.1.6: Types of transmission media

- Tell them that the guided media provides a conduit from one device to another and the unguided media transports electromagnetic waves without a physical medium.
- Tell them that the guided media is of three types:
 - Twisted pair cable
 - Coaxial cable
 - Optical fibre cable

- Explain the advantages and the disadvantages of the twisted pair cable as follows:

Advantages	Disadvantages
<ul style="list-style-type: none"> • Easy to install • High speed capacity • Least expensive 	<ul style="list-style-type: none"> • Susceptible to interference and distortion • High cost of cabling

Fig. 1.1.7: Advantages and disadvantages of twisted pair cable

- Explain the advantages and the disadvantages of the coaxial cable as follows:

Advantages	Disadvantages
<ul style="list-style-type: none"> • High Bandwidth • Better noise Immunity • Easy to install and expand • Inexpensive 	<ul style="list-style-type: none"> • Single cable failure can disrupt the entire network

Fig. 1.1.8: Advantages and disadvantages of coaxial cable

- Explain the advantages and the disadvantages of the optical fibre cable as follows:

Advantages	Disadvantages
<ul style="list-style-type: none"> • Fast • Low attenuation • No Electromagnetic interference • Higher bandwidth • Light weight 	<ul style="list-style-type: none"> • Expensive • Difficult to install • Unidirectional • Fragile

Fig. 1.1.9: Advantages and disadvantages of optical fibre cable

- Tell them that unguided transmission is also called wireless transmission.
- Tell them that the unguided media is of three types:
 - Radiowaves
 - Microwaves
 - Infrared

- Explain the advantages and the disadvantages of the microwaves as follows:

Advantages	Disadvantages
<ul style="list-style-type: none"> • High speed capacity • High frequency • Unidirectional 	<ul style="list-style-type: none"> • High attenuation • Reflected from flat surfaces • Refracted by atmosphere

Fig. 1.1.10: Advantages and disadvantages of microwaves

- List the important terminologies and their definitions, they will be using in their line of work.
- Explain to them about the optical fibre technology.

- Activity Handling Strategy:

Divide the number of participants in two groups. Ask each group the questions one by one. When one group answers a question, ask the other group if they are right. The answers of the questions are given as follows:

1. How has telecom growth benefitted our nation?

The benefits are:

- Increase in Gross Domestic Product (GDP) of the country.
- Increase in government revenue.
- Increase in employment generation.
- Increased in productivity of business.
- Better access to information.

2. Write the advantages and applications of fibre optic cable technology.

Some advantages of optical fibre is technology are as below:

- **Great bandwidth and faster speed:** A single optical fibre cable transmits large amount of information with high speed.
- **Low cost:** In comparison to copper wire the optical fibre technology is cheaper.
- **Thin and light weight:** Optical fibre is thin and light weight which makes installation and maintenance easy.
- **Less signal degradation:** Signal loss in optical fibre is very less in comparison to copper cables.
- **Light signals:** In copper wires, electrical signal causes interference but in optical fibre signals travel in form of light which does not cause any interference.

Some applications of optical fibre technology is given below:

- **Medical:** Optical fibres are used in laser surgeries and endoscopy to check interior parts of body.

- **Defence/Government:** Wide area of application is in hydrophones and Sound Navigation and Ranging (SONAR). Additionally it is used as wiring in aircraft and submarines for faster transmission of signals.
 - **Telecommunications:** Fibre cables are used widely in telecommunication for long distance communication.
 - **Networking:** It is used widely in Local Area Network (LAN) connections because of higher speed and accuracy of data transferred.
 - **Industrial/Commercial:** It is widely used in imaging and sensor devices which measure temperature, pressure and other parameters which later gets installed and transferred to automobiles and machineries.
- 3. Explain the guided and unguided transmission medium.**
- In guided medium, the signals travel through any physical medium such as different types of cables.
 - In unguided medium the signals travel through air and the direction of the signal is not defined, example microwave and radio waves.
- 4. Briefly explain PSTN.**
- PSTN (Public Switched Telephone Network) is the international circuit-switch telephone networks system which is connected through hardwired channel to provide services for public telecommunication. It allows the telephones to communicate with each other through switching centres which are interconnect with telephone lines, fibre optic cables, cellular networks and satellites.
- 5. Mention the elements of an optical fibre cables and their uses.**
- There are mainly three elements present in optical fibre technology. They are:
- **Light source:** It is placed at one end of the device. It receives signals and converts the electric signals to optic signals.
 - **Optic fibre cable:** It is connected from the origin to the destination to transmit light.
 - **The light detector:** It is placed on the opposite end of the light source. It detects the signal and converts it into electric signal. This leads to electric input.
- 6. What is fibre Id (Identification)?**
- Identification of fibre using the core and size is known as fibre Id. There are international standard ID represented for fibre.
- 7. What are aramid fibres?**
- Aramid fibres are used to pull the cable and also to prevent sharp twist or turns in the cable.
- 8. What is a ferrule?**
- Ferrule is a fibre used for alignment and is part of a connector.
- 9. What is scattering?**
- Scattering is the change in light direction after hitting an object.

Key Learning Outcomes

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

1. Describe the importance of maintaining a proper and complete tool kit
2. Identify the basic checks required for a tool-kit
3. List the fibre optic tools along with their usage
4. List the points to check for testing of long outside plant cable and optical fibre cable
5. Explain the testing of optical fibre with VFL (Visual Fault Locator) and inspection microscope
6. Explain the connector end cleaning procedure
7. Identify the tools used in bare fibre test
8. List the steps of bare fibre test
9. Describe the measurements, requirement, specifications and best practices of an Optical Time Domain Reflectometer
10. Explain insertion loss test and optical return loss test
11. Explain optical fibre splicing and its requirement
12. Describe mechanical and fusion splicing
13. List the steps to perform for mechanical and fusion splicing
14. List the checks to prepare cable for splicing
15. Identify the material and equipment used for splicing
16. Differentiate between good and bad splices
17. List the safety norms to be followed during splicing

UNIT 2.1: Tools and Equipment Handling

Unit Objectives

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

1. Describe the importance of maintaining a proper and complete tool kit
2. Identify the basic checks required for a tool-kit
3. List the fibre optic tools along with their usage

Resources to be Used

- Available objects such as a duster, pen, notebook, projector and other teaching aids
- Presentation slides
- Multimedia
- A few hand tools
- A few power tools
- Testing device
- Splicing tools
- Termination tools
- Fibre handling tools

Say

Good Morning and warm welcome to this training program. Before we begin a new session on fibre optic tools and tool kit, let us revise the previous session.

Do

- Begin with revising the things explained in previous session.
- Encourage the participants to give answers, if they have any doubt clarify it and tell them about what they are going to study in new session.

Say

Let us begin a new session on fibre optic tools and tool kit.

Ask

Ask the participants to name some of the tools used in splicing optical fibres.

Demonstrate

- Demonstrate the working of hand tools
- Demonstrate the working of power tools
- Demonstrate the working of testing devices
- Demonstrate the working of splicing tools
- Demonstrate the working of termination tools
- Demonstrate the working of fibre handling tools

Notes for Facilitation

- Show the participants different types of tools and equipment.
- Explain to them the usage of each tool and equipment.
- Tell that there are some precautions that should be taken while using various hand tools as shown in the following table:

Tool	Precautions
Screwdrivers	Keep the tip clean and sharp Keep the handle of the screwdriver clean and intact
Pliers	Refrain from exposing pliers to excessive heat Always cut at right angles, not side to side
Wire cutters	Make sure that the cutting edges are sharp
Power tools	Wear work gloves Wear a face shield Protect power tools from rain or wet conditions. Desist carrying a tool by the cord Disconnect tools when not using them Do not yank the cord or the hose to disconnect it from the receptacle
Splicing tools	Wear goggles for eye protection Work in a well-ventilated area Do not have food or drink near the working area Wash hands thoroughly after splicing cable

- Explain the dos and don'ts of using an Optical Time Domain Reflectometer (OTDR) to test optical fibre cables with the help of the following figure:

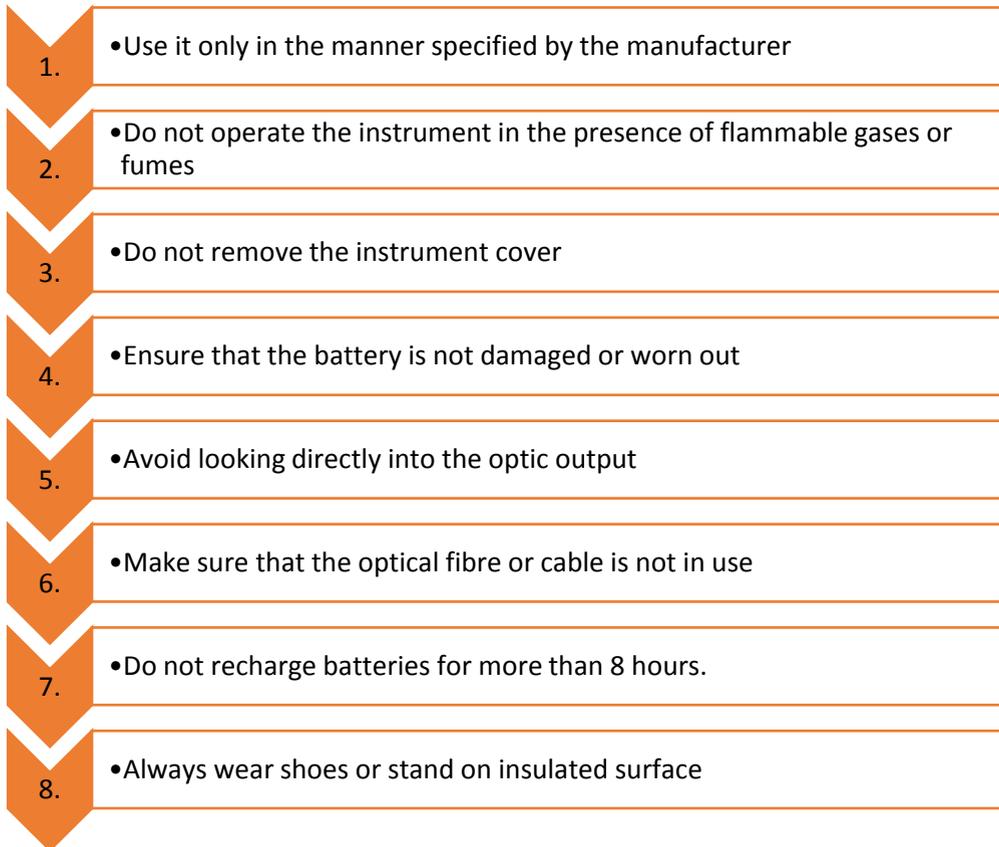


Fig. 2.2.1: Precautions while using Optical Time Domain Reflectometer

UNIT 2.2: Optical Fibre Cable Testing

Unit Objectives

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

1. List the points to check for testing of long outside plant cable and optical fibre cable
2. Explain the testing of optical fibre with VFL (Visual Fault Locator) and inspection microscope
3. Explain the connector end cleaning procedure
4. Identify the tools used in bare fibre test
5. List the steps of bare fibre test
6. Describe the measurements, requirement, specifications and best practices of an (optical time-domain reflectometer) OTDR
7. Explain insertion loss test and optical return loss test

Resources to be Used

- Available objects such as a duster, pen, notebook, projector and other teaching aids
- Presentation slides and multimedia
- Fibre Cable, power meter, visual fault locator (VFL), inspection microscope, optical time domain reflectometer (OTDR)

Say

Good Morning and warm welcome to this training program. Before we begin a new session on Optical fibre cable handling precaution, let us revise the previous session.

Do

- Begin with revising the things explained in previous session.
- Encourage the participants to give answers, if they have any doubt clarify it and tell them about what they are going to study in new session.

Say

Let us start a new session on Testing Optical Fibre Cable.

Ask

Ask the participants whether they know why testing of optical cable is done.

Notes for Facilitation

- Explain to the participants that it is very important to test the fibre cable to check the performance of the cable, continuity and end-to-end loss in the cables.
- Tell them that a cabling plant can be tested for loss, a power meter and source can be used. For larger distance, Optical Time Domain Reflectometer (OTDR) method is used.
- Also, tell them that the reasons for the end-to-end link loss are bad connectors, cables bent too tightly, broken fibres in cables and so on.
- Explain them about the testing of a long outside plant cable.
- Also, tell them about the essential basic preparation required for testing of the cables, such as:
 - Collection and testing of appropriate tools
 - Acquiring cable layout
 - Checking of power meter and the laser sources and so on
- Explain them that they may face a problem of fibre switching. A fibre-optic link comprises two fibres that transmit in opposite directions for providing duplex communication. Sometimes, the transmit fibre and the receive fibre are switched and this leads to improper connection.
- Tell them that, for avoiding the problem, they need to use a visual tracer for verifying the connections. The tracer can be a modified flashlight or even a microscope which will hold the fibre and combine a sufficient amount of power into it.
- Tell them how they can use a visual fault locator (VFL) for testing the fault location. Fibre can be traced visibly by injecting light from a visible source, and correct orientation and continuity can be ensured. Breaks, sharp bends, faulty connectors and such other faults leak the light and thus the defect can be spotted visually.
- Also tell that, VFL is an ideal tool in case of locating a large number of defects occurring at connection points around the fibre cabinets. These types of defects are hidden in Optical Time Domain Reflectometer (OTDR) tracing.

Ask

Ask the participants whether they have seen a microscope.

Notes for Facilitation

- Explain to the participants that it is very important to inspect the connector terminals to avoid any type of contamination that may lead to degradation of performance of the network.
- Tell them that dirty connectors can cause high connector loss, contaminating transceivers and high reflectance.

- Also, tell that there are two applications for visual inspection:
 - During manufacturing, visual inspection is required for the polished connector ferrules in order to evaluate the polishing and to search for the possible defects during the termination process.
 - In the field, inspection is required to verify the cleanliness and check for any damage before testing or establishing connection to transceiver or another connector.
- Explain them the importance of the inspection microscope.
- Tell that visual inspection is done using a microscope comprising:
 - a light source to illuminate the connector and
 - a fixture for holding the fibre or the connector steady in the field of view.
- Explain the steps of visual inspection using microscope. Also, tell them about the cleaning procedures of connector ends.
- Say that visual microscopes should have an infrared filter for the protection of the observer's eye. The filter removes any signals, transmitted in the fibre.
- Also, tell them that any light in the fibre is capture by an optical microscope and it focuses all the light into the eye, which may cause a potential danger to user.
- Also tell that, before inspecting the connectors using a microscope, a user should always check the power levels using a power meter.
- Show them a sample inspection record. The following image shows a sample inspection record

Cable ID	CABLE 07	PASS
Fiber ID	FIBER	
Direction	A->B	
Location A		
Location B		
Operator		
Probe		
Test date		
Profile		

Inspection summary

Zone	Diameter		Defects		Scratches	
	Inner	Outer	Result	Count	Result	Count
Zone_A			PASS		PASS	
Zone_B			PASS		PASS	
Zone_C			PASS		PASS	
Zone_D			PASS		PASS	

Fig. 2.2.1: Sample inspection record



Let us learn about Bare Fibre Test.

Ask

Ask the participants whether they know the reason for testing a bare fibre.

Notes for Facilitation

- Tell the participants the reasons for testing a bare fibre.
- Also, explain how they can conduct a bare fibre test.
- Tell them that they can use an Optical Time Domain Reflectometer (OTDR) for the bare fibre test. Using an Optical Time Domain Reflectometer (OTDR), fibre attenuation is tested, assuming that the fibre is long enough (typically $> \sim 50\text{m}$) for it to be viewed in an Optical Time Domain Reflectometer (OTDR) trace.
- Tell that the cables may be joined to Optical Time Domain Reflectometer (OTDR) through a launch cable with mechanical splice, which is required to connect to the fibre under test.
- Also show them the following figure of Bare Fibre Test using an Optical Time Domain Reflectometer (OTDR):

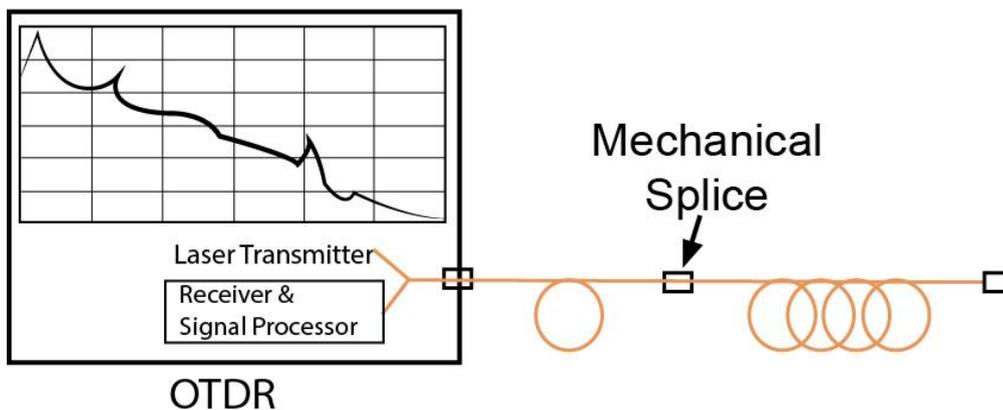


Fig. 2.2.2: Bare Fibre Test using an Optical Time Domain Reflectometer (OTDR)

- Tell them about a method of testing bare fibre, which is easier in field measurements. The following figure represents the method and its characteristics:

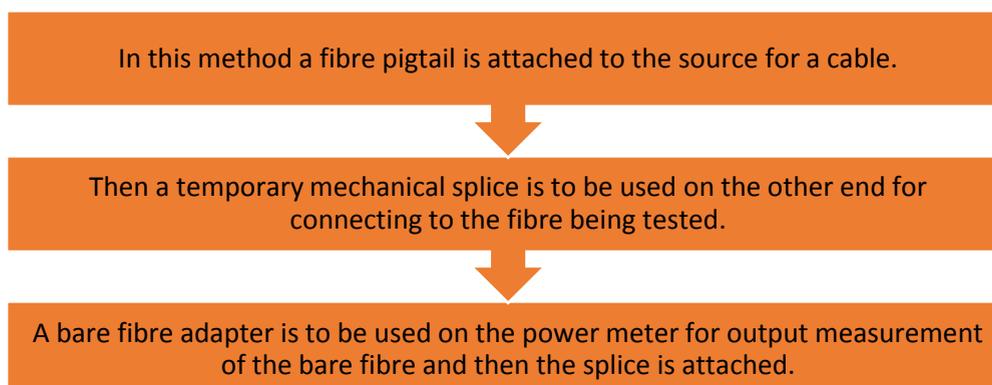


Fig. 2.2.3: A method of Bare Fibre Test

The following figure shows a setup of the Bare Fibre Test using a splice:

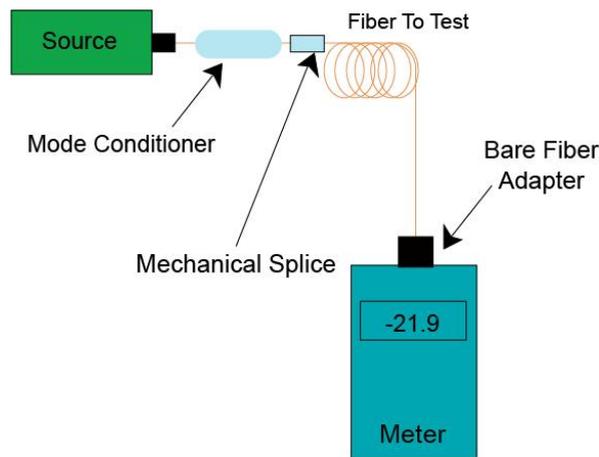


Fig. 2.2.4: A setup of the Bare Fibre Test using a splice

- Explain to them about the Optical Time Domain Reflectometer (OTDR) measurements and need of Optical Time Domain Reflectometer.
- Also, tell them about the key specifications required for the Optical Time Domain Reflectometer.
- Briefly explain to them how Optical Time Domain Reflectometer is chosen considering the applications.
- Also, list the factors to take into account when choosing an Optical Time Domain Reflectometer:
 - Size and Weight
 - Display Size
 - Battery Life
 - Trace or results storage
 - Bluetooth and/or Wi-Fi Wireless Technology
 - Modularity/Upgradability
 - Post-Processing Software Availability
- Tell them about some best practices while using Optical Time Domain Reflectometer.
- Explain to them about the insertion loss test tools and its steps.
- Tell them about optical return loss (ORL). Say that ORL refers to the combination of reflectance from connectors or splices and the backscatter from the fibre for longer cable runs.
- Briefly explain the steps of ORL.
- Also tell them that an ORL tester is applicable to short patch cords only. For a cable installed plant Optical Time Domain Reflectometer is to be used to find ORL problems.
- Tell them about the other types of checks that are required to be done. Also, say that they should create a checklist for all the tests and checks, so that any of them are not missed out.

UNIT 2.3: Optical Fibre Splicing

Unit Objectives

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

1. Explain optical fibre splicing and its requirement
2. Describe mechanical and fusion splicing
3. List the steps to perform for mechanical and fusion splicing
4. List the checks to prepare cable for splicing
5. Identify the material and equipment used for splicing
6. Differentiate between good and bad splices
7. List the safety norms to be followed during splicing

Resources to be Used

- Available objects such as a duster, pen, notebook, projector and other teaching aids
- Presentation slides and multimedia
- Splices, fibre optic cable, wire stripper, isopropyl alcohol and lint-free wipe, epoxy hole, VFL

Do

- Begin with revising the things explained in previous session.
- Encourage the participants to give answers, if they have any doubt clarify it and tell them about what they are going to study in new session.

Say

Let us start a new session on Optical Fibre Splicing.

Ask

Ask the participants whether they can tell why splicing is done.

Notes for Facilitation

- Tell the participants that splicing is a process of connecting two fibre cables permanently. Sometimes semi-permanent splicing is known as termination or connectorization.
- Also tell them splicing produces less light loss and back reflection.

- Tell them the significance of splicing with help of the following figure:

•It joins two broken fibres.

•It connects some of the cores straight through a patch cabinet.

•It extends the cable run.

•It attaches a pre-terminated pigtail.

Fig. 2.3.1: Significance of splicing

- Also tell them about pre-requisites of splicing. Tell that they should:
 - Find the splicing position and location.
 - Check the type of splicing needed for the cable
 - Make sure all the tools required for splicing is available
 - Also check the tools and equipment that is needed for splicing
 - Make sure that battery is charged for splicing
 - Have design of splicing and Right of Way (ROW) letter copy if the fibre is laid overhead
- Tell them that there are major two types of splicing:
 - Mechanical splicing
 - Fusion splicing
- Explain to them the two types of splicing briefly.
- Tell that mechanical splicing is used for as temporarily joining two ends of optical fibres together. It does not require any specialized training. Commonly it is performed when the fast restoration of fibre cut is needed. The following image shows the mechanical splicing of fibre:



Fig. 2.3.2: Mechanical splicing

- Also tell that, two fibre optics cables are precisely aligned together with the use of alignment device and index matching gel of a similar Radio Frequency (RF) index, covering the possible air gaps and allowing the light travel from one fibre to another with least loss of reflection.

- Briefly explain the steps of mechanical splicing procedure with help of the following figure:



Step 1

- Strip back fibre buffer and coating 1.5 inches from the fibre tip. Clean stripped fibre with Isopropyl Alcohol and Lint-Free Wipe.



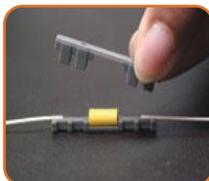
Step 2

- Cleave fibre to 14mm in length. Clean the cleaved fibre with Isopropyl Alcohol and Lint-Free Wipe.



Step 3

- Insert first fibre tip mid way into the v-groove of the splice core. Insert the second fibre tip into the splice core until it butts up against the first fibre.



Step 4

- In the last, lay the splice core with the joined fibres into the bottom shell of the splice housing. Snap the top shell onto the bottom shell to complete the assembly. If you wish to make this a permanent splice, place a drop of quick curing adhesive into each epoxy hole in the top shell of the splice.

Fig. 2.3.3: Mechanical splicing procedure

- Also, tell them that to test the mechanical splicing visual fault locator (VFL) is used. Light from the VFL is applied on the fibres and if the fibre is illuminating then it means that two fibre ends are mated properly. This is because light from the VFL is injected into the fibres and insert the cleaved end mid-way through the splice core. It causes the fibre to illuminate. The following image shows the testing procedure of mechanical splicing:

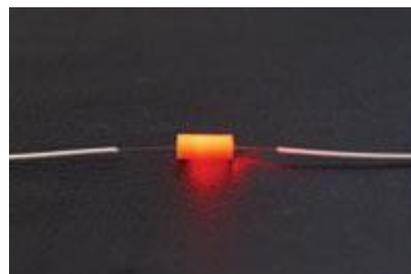
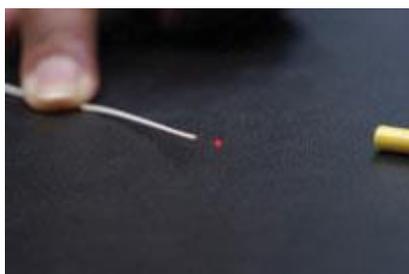


Fig. 2.3.4: Mechanical splicing testing

- Explain to them the concepts fusion splicing. Say that, two fibres are pushed together after being heated, to create a continuous optical path. The following figure shows the concept of fusion splicing:

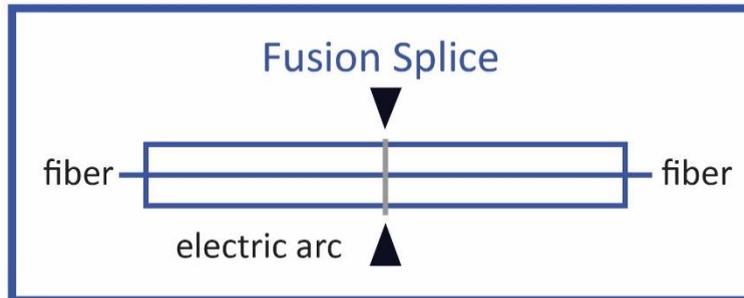


Fig. 2.3.5: Fusion splicing

- Also brief them about the tools and testers required for the fusion splicing using the following table:

Sl no.	Tools/Eqpt name	Sl no.	Tools/Eqpt name
1	Fusion Splicing Machine	7	Fibre nipper
2	Precision Cleaver	8	Heat shrink tube protector
3	Round Cutter	9	Lint free tissue paper
4	Fibre stripper	10	Isopropyl (IP)
5	Long nose plier	11	Fibre disposable container
6	Screw Driver	12	Eye protector

Fig. 2.2.6: Fusion splicing requirements

- Explain the fusion splicing in detail. The steps for the fusion splicing are as follows:
 - Step 1: Preparation for Splicing:** The first step in fusion splicing is to prepare the fibre by stripping the protective coating and then making the bare fibre to show. Then the cleaning of fibre is done. The following image shows the preparation of splicing:



Fig. 2.3.7: Splicing preparation

- **Step 2:** Cleave the fibre: Using a good fibre cleaver is important for the fusion splice. The cleaved end should be mirror-smooth and perpendicular to the fibre axis to get a proper splice. The following image shows the procedure of cleaving of fibre:



Fig 2.3.8: Cleave the fibre

- **Step 3:** Fuse the Fibre: Two steps are done in this process which are listed in the following:
 1. **Alignment** – It is automatic or manual procedure depending on the fibre that needs for splicing. The accurate alignment depends upon the tool quality.
 2. **Heating** – It is done after alignment. The electrical arc is used to melt the fibres and attached permanently together.

The alignment process of fibre is shown in the following figure:

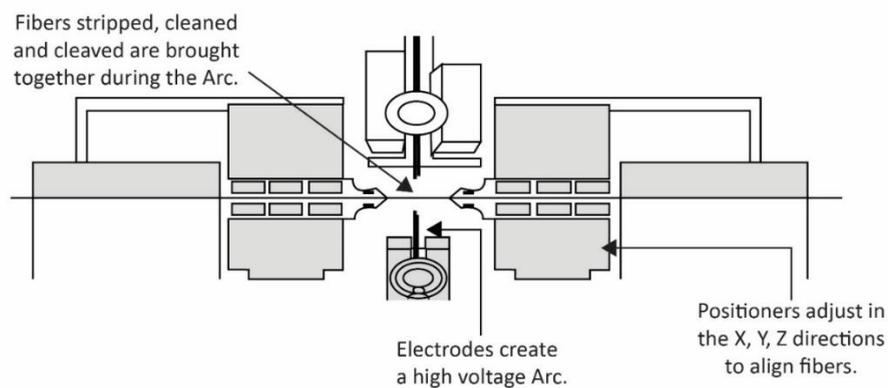


Fig 2.3.9: Alignment of two Fibre cables on a machine for splicing

- **Step 4:** Protect fibre. It is a process of protecting the fibre from bending and tensile forces. This helps to avoid breakage during handling. Fused fibre can hold up to 0.5 to 1.5lbs but still we need protection. It is done with the use of heat shrink tubing, silicone gel. In some cases, mechanical crimp protectors are used.

Once the splicing is done then clean and smooth fibre end display observed in the splicing machine screen making the total fusion splicing loss should be better than 0.1 dB.

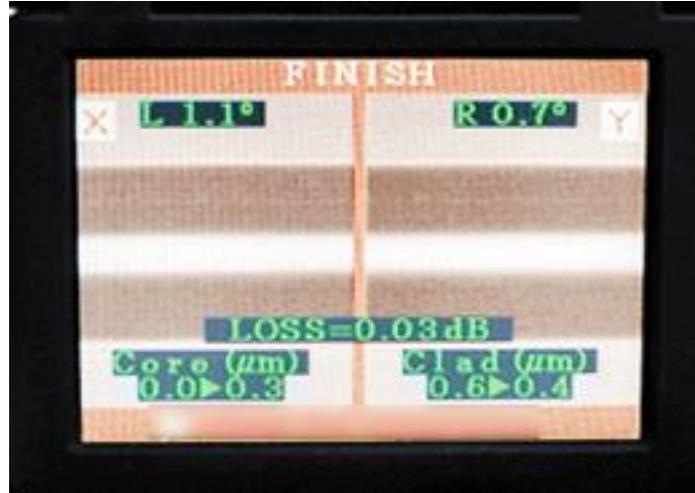


Fig 2.3.10: Showing splice loss

- Provide them some tips for better splicing.
- Also, tell them about good and bad splices.
- Explain the safety norms and rules for optical cable splicing.
- **Activity Handling Strategy:** Divide the number of participants in two groups. Ask each group the questions one by one. When one group answers a question, ask the other group if they are right. The answers of the questions are given as follows:
 1. **What are the various tests conducted once the Fibre optic cables are installed?**
Some of the tests conducted on the installed the Fibre optic cables visual inspection with Visual Fault Locator (VFL), visual connector inspection with inspection microscope, insertion loss test, Bare Fibre Test, Optical Return Loss test and so on.
 2. **How can it be ensured that each splice is good?**
Verify all the splices individually with an Optical Time Domain Reflectometer (OTDR) test also, as it is the only way to ensure that each splice is good.
 3. **As a network user, what are the tests which are essential to check the quality of the network?**
The tests essential to check the network quality are route inspection, testing with Optical Time Domain Reflectometer, jitter test, continuity test, insertion loss test, ORL test and so on.
 4. **List the names of the testing tools and equipment.**
Some of the testing tools are: VFL, Inspection microscope, Optical Time Domain Reflectometer (OTDR), power meter.
 5. **List basic preparations related to tools that you would do for an error free testing.**
The preparations are as follows:
 - Before starting, get together all the tools and make sure they are all working properly and we know how to use them.
 - Try all the equipment in office; and then take them to the field.

- If the power meter has internal memory to record data ensure to use this also.
- Make sure cable layouts for every fibre is available to test and calculate a loss budget estimate the test results.
- It's hard to get the job done when you have to call the manufacturer from the job site on your cell phone to ask for help.
- Test every one of your reference test jumper cables in both directions, using the single-ended loss test, to make sure they are all good.
- You can often customize these reports to your specific needs - figure all this out before you go out in the field - it could save you time on installations.
- A higher power version of the fibre tracer called a visual fault locator (VFL) uses a visible laser that can also locate faults.
- The red laser light is powerful enough for checking the continuity or to trace fibres for many kilometres, identify splices in splice trays and show breaks in fibres or high loss connectors.

6. What is a VFL and what tests can be conducted by using it?

A VFL is a higher power version of the fibre tracer that uses a visible laser to locate faults.

VFL is used in continuity testing. It is used to:

- Identify the fault location of the Fibre such as any breaks, bends and so on
- Verify mechanical splices by visually minimizing light

7. List the general specifications of a VFL.

The specifications are as follows:

VFL General Specification	
Fibre Test Types	Multimode and Single Mode
Visible wavelength	635 nm
Laser safety	Class II
Power	Continuous and or flashing
Modes	1 – 5 Km
Range (distance in KM)	

Fig 2.3.11: VFL general specification

8. List the two tests that can be conducted using a VFL.

VFL is used to:

- Identify the fault location of the Fibre
- Verify mechanical splices by visually minimizing light

9. Explain how a visual connector inspection is done with help of a microscope?

The steps are as follows:

- Inspect the connector with microscope.
- Observe the connector end.
- Clean the connector.

10. List the tools required for a visual connector inspection.

The tools required are as follows:

- Fibre inspection microscope and adaptor
- Adaptor inspection tools
- Universal adaptors
- Cleaning swabs
- Fibre adaptor cleaner
- Non-woven cloth wipes
- Fibre connector cleaning tool

11. List the steps for conducting a visual connector inspection.

The steps are as follows:

- Inspect the conductor with microscope.
- Observe the connector end.
- Clean the connector.

12. List the steps for the connector end cleaning procedure.

The steps are as follows:

- Ensure that dust caps are on connectors, bulkhead splices, patch panels, or anything that can be connected with it.
- Use lint-free pads and isopropyl alcohol to clean the connectors.
- All “canned air” now has a liquid propellant. These cans are used to blow dust out of the bulkheads with a connector on the other side or an active device mounted. Never using compressed air from a hose.
- A better way of cleaning bulkheads is to remove both the connectors and clean them with Alco Pads
- Detectors on fibre optics power meters can also be cleaned by using the Alco Pads to remove dirt.
- Take the connector adapter off and wipe the surface, then air dry.
- Ferrules on the connectors/cables which are used for testing will get dirty because they scrap off the material of the alignment sleeve in the splice bushing.
- Some companies sell cleaning kits for fibre optics. These are good solutions but perhaps not as cost-effective as making your own to meet your needs.

13. List the reasons for conducting a bare Fibre test.

The reasons for conducting a bare fibre test are:

- To confirm on the Fibre or cable that it meets all the specifications
- To confirm that it is in good condition to install

14. List the tools required for a bare Fibre test.

The tools required for the bare fibre test are: Knife, Armour stripper, Kevlar shears, Alcohol and wipes, Fibre stripper, Fibre cleaver, Bare fibre adapter, Optical Time Domain Reflectometer (OTDR), Heat shrink and cable ties.

15. List the steps involved in a bare Fibre test.

The steps are as follows:

- **Step 1** - Inspect the cable and record any visible signs of defects.
- **Step 2** - Strip at least 2 ft. of cable end, clean and strip the fibres.
- **Step 3** - Connect the fibre using a bare fibre adapter to an Optical Time Domain Reflectometer through a patch cord.
- **Step 4** – Start the Optical Time Domain Reflectometer and select the correct wavelength and refractive index for the test. Print and record the Optical Time Domain Reflectometer traces on disk. Indicate direction of measurement and loose tube - fibre color.
- **Step 5** - Compare the test results to the manufacturer's specifications.
- **Step 6** - Remove bare fibre adapter and cut off excess fibre from the cable end.
- **Step 7** - Install heat shrink / protective covering to the cable end to make sure they the entry of moisture and contaminants are prevented.

16. List the difference between 'absolute' and 'relative measurements'.

- An absolute measure is one that uses numerical variations to determine the degree of error. Absolute measures take the form of positive numbers, even if they represent high or low estimations.
- Relative measures are the major alternative to absolute measures. They use statistical variations based on percentages to determine how far from reality a figure is within context.

17. What are the tools required for an insertion loss test?

The following tools are required:

- Power meter
- Light source
- Connector
- Reference Cable
- Alcohol wipes
- Actual cable for 'Testing'

18. What are the steps involved in an insertion loss test?

The steps are as follows:

- Connector end-faces are to be inspected and cleaned (Alcohol Wipes) prior to mating with through adapters.
- Set-up Light Source, Power Meter e.g. adapters, power supply, data entry, etc.
- Setup launch cable for calibration before actual tests.
- Connect actual leads to the launch cable in order check loss at one end.
- Connected the third lead to the launch and the actual lead to check the loss the end 2.

19. What is an 'optical return loss' and what are the steps to measure the same?

ORL refers to the combination of reflectance from connectors or splices and the backscatter from the fibre for longer cable runs. This is calculated as the light that is reflected back from the fibre from the light source and the interference caused by the air connectors and the surface. The steps are as follows:

- Optical Reference Loss (ORL) referencing: measure the output power level at the fibre jumper using a separate power meter.
- Measure the ORL of the front connector (jumper to test equipment connection). Requires use of connectors.
- Connect to the fibre under test.
 - ORL is measured in dB and is a positive value.
 - Higher the number, smaller the reflection – yielding the desired result.
 - ORL is most commonly measured at 1310, 1550 and 1625nm single-mode wavelength.

20. What is a 'Splice Loss' and how is it measured?

Optical power loss at the splicing point is known as splice loss. An Optical Time Domain Reflectometer (OTDR) can be used for splice loss measurement.

21. Explain the functioning of an Optical Time Domain Reflectometer (OTDR).

An Optical Time Domain Reflectometer (OTDR) is a Fibre optic tester used to test optical networks that support telecommunications.

It works like an 1D radar system.

It is used to detect, locate, and measure elements at any location on a Fibre optic link.

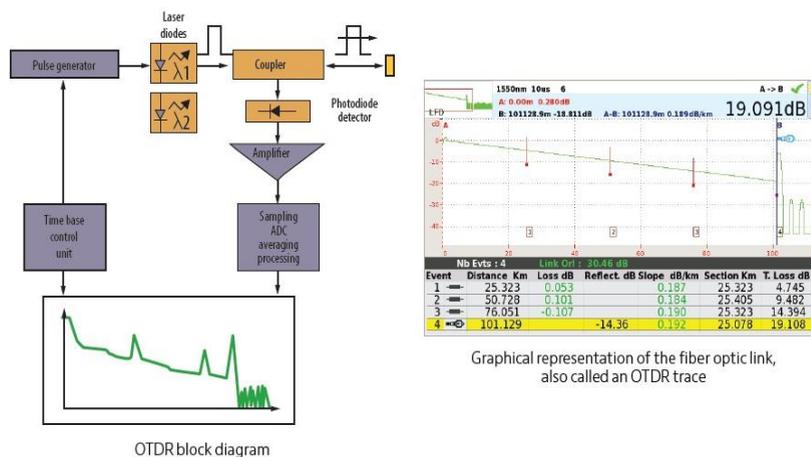


Fig 2.3.12: Optical Time Domain Reflectometer block diagram and trace

22. What is splicing?

Splicing is a process of connecting two fibre cables permanently. Sometimes semi-permanent splicing is known as termination or connectorization.

23. What are the types of splicing?

There are two types of splicing: Mechanical splicing and Fusion splicing.

24. List the difference between mechanical splicing and fusion splicing.

Mechanical splicing	Fusion splicing
Higher loss and greater reflectance as the fibre ends are crimped together to hold them in place	Lower loss and better reflectance performance
Used with both single and multimode fibre	Mainly used with single mode fibre
Normally used for quick and easy splicing	Takes longer time than the mechanical one
For indoor transmission cables, mechanical splicing is used instead of the expensive fusion splicers.	Fusion splicing is generally used for outdoor, high-performance and long-haul single mode networks. This is also used for making stable fibre optic devices such as amplifiers and fibre lasers.

25. List the steps required for preparing the cable for 'splicing'.

The steps are:

- Check the installed cable, whether it has all the parameters as per the plan.
- Look for the damage or any issues
- Make sure that bend ratios are as per the measurement.
- Make sure that cable is placed on a stable joining pit.
- Secure the cable properly to avoid damage.
- Check that the fibres are joined as per the colour coding and sequence.

26. List the steps required for mechanical splicing.

The steps are as follows:

- **Step 1:** Strip back of the fibre buffer and coating by 1.5 inches from the fibre tip. Clean the stripped fibre by using Isopropyl Alcohol and Lint-Free Wipes.
- **Step 2:** Cleave fibre to an approx. 14mm length. Clean the cleaved fibre by using Isopropyl Alcohol and Lint-Free Wipes.
- **Step 3:** Insert first fibre tip mid-way into the v-groove of the splice core. Insert the second fibre tip into the splice core till it butts up against the first fibre.
- **Step 4:** In the last, lay the splice core with the joined fibres into the bottom shell of the splice housing. Snap the top shell onto the bottom shell to complete the assembly.



Key Learning Outcomes

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

1. Explain the importance of a site visit
2. List the benefits of a route inspection
3. Describe the steps of route inspection
4. List the actions to be performed during a route walk
5. Describe the various fibre optic cable specifications
6. Explain the factors affecting fibre optic cables
7. Explain the proper handling of optical fibres during installation
8. List the points to be considered while installing an Optical fibre cable
9. Describe the steps involved in an Optical fibre cable installation
10. Identify the points to be tested after installation
11. List the advantages of documentation and the importance of its proper storage

UNIT 3.1: Site Visit and Route Inspection

Unit Objectives

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

1. Explain the importance of a site visit
2. List the benefits of a route inspection
3. Describe the steps of route inspection
4. List the actions to be performed during a route walk

Resources to be Used

- Available objects such as a duster, pen, notebook, projector and other teaching aids
- Presentation slides
- Multimedia

Say

Good morning and warm welcome to this training program. Before we begin a new session on site visit and route inspection, let us revise the previous session.

Do

- Begin with revising the things explained in previous session.
- Encourage the participants to give answers, if they have any doubt clarify it and tell them about what they are going to study in new session.

Say

Let us start new session on site visit and route inspection.

Ask

Ask the participants whether they know why it is important to do site visit.

Notes for Facilitation

- Explain to the participants that a site visit is one of the most important steps in the placement of optical cable.
- Tell them a visit to the site will help them in observing any unusual situations that require special attention.
- This includes determining things like the best available options for cable placement, obstacles in cable placement to be avoided or overcome, which local authorities may have to be contacted before routing and so on.
- Give an example:
 - If they notice that there is operating machinery on site then they can make a note to plane the cable route accordingly.
- It helps in planning the cable route and evaluating its ability to support the planned placing procedure.
- Tell them the benefits of doing a route inspection.
- Explain the steps in route inspection:
 - Obtain an Optical fibre cable route plan
 - Verify the plan through a 'Route walk'
 - Take corrective actions
- Tell them that they should take care of the following general issues:
 - Try to select a route along an existing telecommunications infrastructure.
 - Ensure that the workers, equipment, and materials have an easy access.
 - Ensure that there is a spacious and safe storage area.
 - Ensure that the storage area is secure from vandalism and theft.
 - Ensure that all splice locations are properly bonded and grounded to an earth ground.
 - Ensure that there is sufficient unobstructed space available for the pulling equipment.
 - Ensure that all necessary and required guards and warning signs are placed in proper places to protect both the optical cable and people around it.

UNIT 3.2: Installation of Fibre Optic Cable

Unit Objectives

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

1. Describe the various fibre optic cable specifications
2. Explain the factors affecting fibre optic cables
3. Explain the proper handling of optical fibres during installation
4. List the points to be considered while installing an Optical fibre cable
5. Describe the steps involved in an Optical fibre cable installation
6. Identify the points to be tested after installation
7. List the advantages of documentation and the importance of its proper storage

Resources to be Used

- Available objects such as a duster, pen, notebook, projector and other teaching aids
- Presentation slides
- Multimedia
- Optical fibre cable
- Optical fibre cable termination tools and equipment
- Continuity testing equipment

Say

Good Morning and warm welcome to this training program. Before we begin a new session on installation of fibre optic cable, let us revise the previous session.

Do

- Begin with revising the things explained in previous session.
- Encourage the participants to give answers, if they have any doubt clarify it and tell them about what they are going to study in new session.

Say

Let us begin a new session on installation of fibre optic cable.

Ask

Ask participants, whether they know about the various fibre optic cable specifications.

Notes for Facilitation

- Explain to the participants that the tensile strength of a fibre cable refers to the highest load a cable can bear without any damage.
- Tell them that it is measured in Newtons or pounds.
- Tell them that it is important for an optical fibre splicer to know the tensile strength of the cable to ensure that it is not subjected to excessive load during or after installation.

Demonstrate

- Show the participants the correct and incorrect way of bending an optical cable.

Notes for Facilitation

- Explain to the participants that the bend radius of a fibre cable refers to the smallest radius of a bend a cable can withstand without getting damaged.
- Tell them that the bend radius is proportional to the fibre diameter. Tell them that as a general rule, it should not be less than 15 times the cable radius.
- Tell them that smaller the bend radius, more flexible is the cable.
- Tell them that if the cable is bent more than its bend radius, it could result in excessive loss of light or glass impairment.
- Tell them that cable crush and impact refers to the cable testing procedure which involves crushing a cable between two plates to measure optical power loss.
- Tell them that if a cable is subjected to crush load in excess of its limit, it could result in increase in attenuation rate and fibre breakage.
- Tell them that attenuation refers to the loss of optical power in a cable leading to a reduction in signal strength.
- Tell them that attenuation is measured either as the loss of the fibre per unit length, in dB/km or in terms of voltage.
- Tell them that attenuation of an optical fibre is due to two reasons, absorption and scattering.
- Explain that the following factors cause attenuation in an optical fibre:
 - Dirty fibre end-faces
 - Gap between fibre ends and connectors
 - Improper installation of connectors
 - Excessive bending of fibre
 - Impurities in fibre

- Explain that continuity of a fibre means that there is no breakage, either within the fibre cable or in the fibre connectors and the fibre optic link is continuous.
- Continuity of an optical cable is tested by injecting visual light into one fibre end and checking the light coming out from the other end.
- Explain that the two types of factors that affect optical fibre cable are:
 - Natural
 - Man-made
- Explain each of the factors one by one, in detail.
- Explain that the mechanical and environmental factors affect cable performance.
- Tell them that even though fibre optic cables can withstand installation and environmental stresses, it is important to handle them very carefully.
- Explain that fibre optic cables are very sensitive in case of excessive pulling, bending, twisting, crushing and other any impact forces. Any of these can damage the cable and undermine its performance.

Ask

Ask participants, whether they can tell any precaution that should be taken while handling Optical fibre cable.

Notes for Facilitation

- Explain that care should be taken when unloading and unwrapping the cable.
- Tell them that to reduce any damage due to weather, theft or other construction, fibre optic cable, equipment and supplies should be delivered as closely to the time of use as possible.
- Tell them that as soon as the components are received, they should be carefully inspected, checked for any discrepancies and notified to the supplier and replaced.
- Tell them that all equipment and cabling should be stored in a cool and dry place.
- Explain that the following precautions should be taken when handling Optical fibre cable:
 - Use outer covering to protect the cable drum and reel before installation
 - Do not lift the drum without using a spreader beam
 - Store and move the cable drum in upright position only
 - Do not lift the drum without using a spreader beam
 - Roll the drums as per the direction given on the drum flanges
 - The cable drum should not to be dropped directly on the floor while unloading truck
 - Use forklift to unload drums from truck else roll them on to the receiving platform
 - Try to store the drums indoor If storing outdoor, ensure that the storing surface is hard and there is no contact with moist soil
 - Place a wedge to ensure that the reel does not roll away

- Explain that before beginning the installation process, they should perform thorough inspection of the drum and cable.
- Tell them about the checks they should perform when inspecting a cable.
- Tell them about the checks they should perform when opening a drum.
- Tell them that there are four phases of cable testing:
 - Visual inspection to check for damage during shipping
 - Pre-installation testing after delivery
 - Installation testing after cable is installed
 - Final acceptance testing
- Tell them that pre-installation testing involves performing an Optical Time Domain Reflectometer test to verify the characteristics of the cable.
- Tell them that the following general precautions should be followed while handling Optical fibre cable:
 - Conduct a thorough site survey
 - Follow the cable manufacturer's recommendations.
 - Develop a cable pulling plan
 - Never exceed the cable's stated maximum pulling tension.
 - Never exceed the cable's stated minimum bending radius.
 - Never exceed the cable's maximum crush load.
 - Never use detergent or petroleum based products as a cable lubricant.
 - Document the installation
- Tell them that pre-installation testing involves performing an Optical Time Domain Reflectometer test to verify the characteristics of the cable.
- Tell them that after the pre-installation checks are completed, the next step is installation.
- Tell them that installation refers to the process of physically installing and completing the Optical fibre cable network.
- Tell them that installation involves coordinating the activities of many people and the best way to do that is to develop a checklist based on design.

- Tell them that the basic checklist for cable installation is as follows:



Fig. 3.2.1: Installation checklist

- Tell them the steps of installation process.

Ask

Ask participants, whether they know about the trenching process.

Notes for Facilitation

- Tell them about the trenching process.
- Tell them that a trench is a type of deep and narrow hole or depression in ground for the entire length of the cable route.
- Tell them that the trench is then filled with fine granular soil to cushion the cable.
- Tell them that buried cable can also be placed using a ploughing process.
- Tell them that after the cable is laid, it is covered with 4 to 6 inches of granular soil followed by good quality soil containing no rocks or debris.
- Tell them that if the installation has to be done under routes that contain asphalt surfaces such as sidewalks and roads, then shallow trenches, approximately 2 cm wide and 30 cm deep are dug up. This process is known as micro-trenching.
- Tell them that when laying out cable in a trench, ensure that sufficient extra cable at the splice locations to compensate for any splicing problems and maintenance requirements.

- Tell them that the advantages of using the trenching process to lay the fibre cable is as follows:
 - High speed of execution
 - Low cost
 - Low environmental impact
 - Less disruption to road traffic
 - Ease of obtaining permits
- Tell them about the precautions that should be taken when using trenching process.
- Tell them that one of the major hazards of using the trenching method is the possibility of the cable being accidentally dug up.

Ask

Ask participants, whether they know about the aerial cabling process.

Notes for Facilitation

- Tell them about the aerial cabling process.
- Tell them that aerial cable is used primarily for outside plant installation (OSP) on poles.
- Tell them that aerial cables are of two types:
 - Catenary wire style
 - Self-supporting style
- Tell them that depending on the type of cables, there are two ways to install aerial cables:
 - Lashing the cable to a steel messenger
 - Self-supporting figure-8 installation
- Tell them that the following figure lists the steps of lashing the cable to a steel messenger:

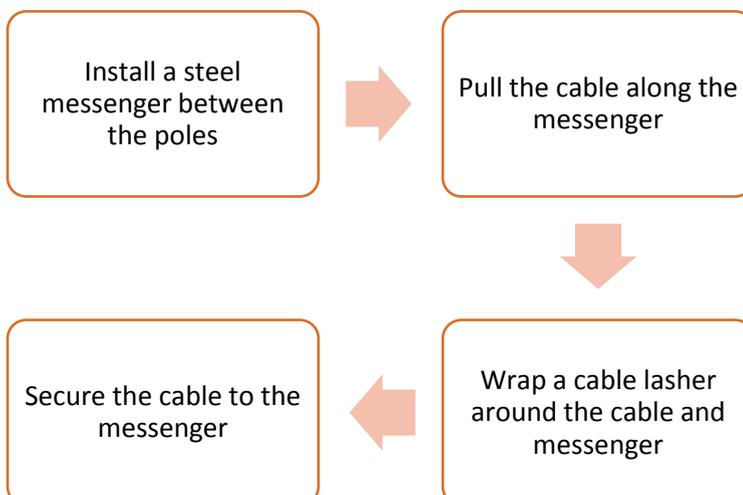


Fig. 3.2.2: Aerial installation

- Tell them that there are two ways to lash a cable to a messenger:
 - Moving reel method
 - Stationary reel method
- Tell them that while using the moving reel method, the reel should be moved slowly under the route when the lasher is pulled along to lash the cable to the messenger.
- Tell them that in the stationary reel method, the reel is left in the place and the cable is pulled along with the route. After the cable is in place, the lasher is pulled along with the route to lash the cable.
- Tell them that the self-supporting cables do not use a messenger strand for installation.
- Tell them that both the steel messenger and the fibre cable are designed into their cable sheaths to provide support.
- Explain the steps of figure-8-ing process.
- Tell them that the process of coiling the cable without twisting or tangling it is known as the figure-8 method.
- Tell them that laying the cable in figure-8"-shaped loops on the ground makes bi-directional pulls possible to feed the cable from both the ends.

Ask

Ask participants, whether they know about the ducting process.

Notes for Facilitation

- Tell them about the ducting process.
- Explain that to provide protection to the fibre cable, it is usually installed in a duct. A duct is a pipe made of plastic.
- Tell them that cable can be installed into a duct by pulling or blowing technique.
- Explain that the pulling and blowing methods can be compared on the following points:

Pulling method	Blowing method
<ul style="list-style-type: none"> •Used for straight duct route •Suitable for short distance •High forces on cables and ducts •Higher chance of cable damage •Light weight 	<ul style="list-style-type: none"> •Used for duct route with multiple bends •Preferred for long distance •Forces on cable and duct can be controlled •Minimal chance of cable damage

Fig. 3.2.3: Comparison between Pulling and blowing methods

- Tell them that in pulling method, cable is pulled, either manually or by puller machine, through duct with the help of pre-installed rope inside the duct.
- Tell them that the length of cable that can be pulled depends on the following factors:
 - Type of cable
 - Conduit or inner duct
 - Temperature
 - Straightness of the run
- Tell them that in order to reduce friction that increases pulling tension, cables should be lubricated.
- Tell them that in blowing method, cable is installed by blowing a high speed compressed air into the duct while simultaneously pushing the cable into the duct.

Ask

Ask participants, whether they know about the splicing process.

Notes for Facilitation

- Tell them that after the cable has been placed, the next step is jointing and terminating the cable.
- Tell them that fibre termination refers to the process of connecting the fibre cable to a device or an equipment. This enables the cable to be connected to other cables or devices.
- Tell them that there are two methods of termination:
 - Connectorization
 - Splicing
- Tell them that the connectors are used to create a temporary joint or to connect the fibre to a device.
- Tell them that the components of a connector are as follows:

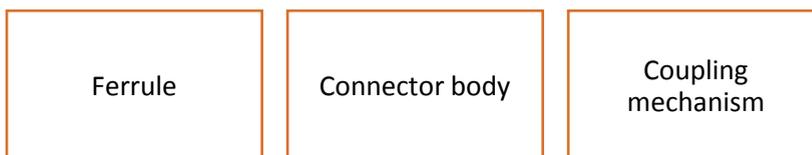


Fig. 3.2.4: Components of a connector

- Explain that the ferrule is a thin cylindrical structure made from ceramic, metal, or high-quality plastic. It has a hollow centre to hold one strand of fibre.
- Tell them that the connector body holds the ferrule and attaches to the cable jacket.
- Tell them that the coupling mechanism is a part of the connector body. It holds the connector in place when it is attached to another device.
- Explain that when different types of cables are needed to be mixed, then the splicing method is used to connect the two fibres permanently.

Demonstrate

- Demonstrate the fibre optic termination process.

Notes for Facilitation

- Tell them about the termination process.
- Tell them that after the termination process, the next step is testing the fibre optic network.
- Explain to them that it is important to do proper testing of cables for the following reasons:
 - Increases the system's longevity
 - Reduces system downtime
 - Minimizes maintenance needs
 - Supports system upgrades
- Tell them that the following test must be done:
 - Continuity and polarity
 - End-to-end insertion loss
- Tell them that continuity can be tested by a simple visible light source test.
- Tell them that the steps of the test are as follows:

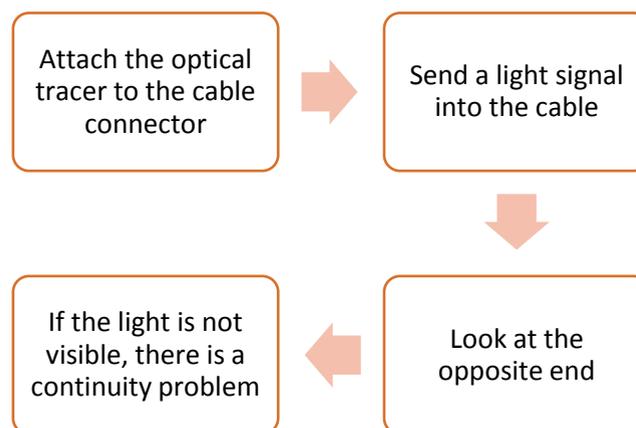


Fig. 3.2.5: Continuity test

- Tell them that they will learn in detail about these tests in the next module.

- **Activity Handling Strategy:**
 - 1. What is route inspection?**

To maintain optimum splice point locations for laying the optical cables the route inspection is performed in which the map of the area is studied and a survey is done.
 - 2. What are the benefits of 'Route Inspection'?**
 - Increases the quality of work
 - Locates the gaps
 - Finalizes the physical location
 - Helps to improve health and safety standard
 - Avoids error and re-work
 - Decreases or prevents accidents
 - 3. Briefly explain the three steps of route inspection.**
 - Step 1 – Obtain an Optical Fibre Cable (OFC) route plan.
 - Step 2 – Verify the plan through a 'Route Walk'.
 - Step 3 – Take corrective actions.
 - 4. What does the fibre optic installer kit primarily consists of**
 - Fibre optic cable
 - Pig tail (2 in number)
 - Stripper
 - Mechanical splice
 - Cleaver
 - IPA cleaner and wipes
 - Trash can
 - Fusion splicer
 - 5. Which tools are required to complete most common fibre optic operations?**
 - Knife
 - Armour stripper
 - Kevlar shears
 - Alcohol and wipes
 - Fibre stripper
 - Fibre cleaver
 - Bare fibre adapter
 - Optical time-domain reflectometer (OTDR)
 - Heat shrink and cable ties
 - 6. What is the role of a connector curing oven?**
 - Connector curing oven is used to heat curing fibre optic connector such as pigtail, jumper head, fibre optic connectors which are suitable for the processing and assembly after curing of fibre optic connectors.
 - 7. What is an optical fibre?**
 - A fibre optic cable is generally made of five elements.
 - Core is the element which carries the light signals.

- The core is surrounded by an optic cladding which allows total internal reflection to take place in the core.
- The cladding is surrounded with buffer material which protects the inner core and cladding from any damage.

8. Define tensile strength. What is the reason for not suppressing the tensile strength?

- Tensile Strength – It is the maximum force that can be applied on the cable without damaging.
- The installed cable is subjected to light pressure and load. This process is called, operating load.
- The main goal of the optical fibre cable installation is to install it with less pressure and stress. So, the load has to be calculated before the installation.

9. What is a short term load?

- Short-term load is an initial stage of installing the cable. It gives strength to withstand the cable during installation.

10. What is minimum bend radius?

- The most important factor to consider while splicing optical fibre cable is its bend radius which can be defined as a radius to which a cable can be curved without reaching its breaking point. Bend radius is measured by the inside diameter which means that a fibre optic with small bend radius will have more material flexibility.

11. What is installation bend radius?

- The bend radii of fibre cable is defined as the minimum radius of bending the cable during installation and after installation. This ensure the fibre optic cable is not damaged during installation process. This is known as installation bend radius.

12. What are the dos and don'ts while installing a cable?

- Do not leave loose cable, always stretch the cable along the layout
- Make sure all the joints are secured properly
- Lay the cable as per the layout
- Cable should be supported through cable ties, clamps and straps for safety
- Pull to cable to avoid any kink and bend
- If the cable has loose loops then create uniform loops and secure to avoid any damage
- Use trays and structures to lay the cables and support them

13. How is the test procedure conducted?

- Ensure all tools equipment are working properly and use them properly
- Maintain and calibrate equipment as per the requirement before using them
- Get cable layout to identify cable path with splicing points to check
- Test every jumper cables in both directions, using the single-ended loss test
- Create basic plan to carry out the splicing operation before reaching the site
- Use a higher power version of the fibre tracer called a visual fault locator (VFL) to locate faults.

- Use red laser to do continuity checking , to trace fibres, to identify splices in splice trays and to show breaks in fibres or high loss connectors

14. What is the chance of damaging the cables?

- The cladding is surrounded with buffer material which protects the inner core and cladding from any damage.
- A strengthening material surrounds the buffer which prevents the cable from any damage caused due to bending or stretching.

15. What all things is a cable tested for?

- Visual Fault Locator
- Inspection Microscope
- Bare Fibre Test
- Optical Time-Domain Reflectometer (OTDR) Test
- Insertion Loss Test
- Optical return Loss Test

16. What is attenuation?

Attenuation is the loss in the power of signal in the form of light when it is transmitted from one end to another. It is caused because of the passive components such as cable, cable splices and cable connectors.

17. What are the reasons for attenuation?

- It is caused because of the passive components such as cable, cable splices and cable connectors.

18. What is fibre optics continuity?

This is calculation of the intensity that is passed from the light source to the other end, which is the receiver, to check the continuity of the Optical Fibre Cable (OFC).

19. When is the continuity good?

Connect the fiber cable to test the visual tracer and visually from the other end to check the transmitted light through the core of the fibre. If the light is not coming from other section then there must be a bad connection or broken cable. When the light passes completely then the continuity is good.

20. What are the natural factors affecting OFC?

- Low and high temperature
- Wind speed
- Water salt
- Soil conditions
- Rodent, birds and insects
- Light

21. What is the man-made factors affecting the OFC?

- Factory smoke and air pollution
- Traffic
- Induced voltage
- Direct Current (DC)

- v. Petroleum
- vi. Gas leakage
- vii. Fire
- viii. Nuclear radiation
- ix. Installation practices

22. What are mechanical and environmental effects on the choice of cable components?

- i. Factory smoke and air pollution
- ii. Traffic
- iii. Induced voltage
- iv. DC current
- v. Fire
- vi. Nuclear radiation
- vii. Hydrogen
- viii. Installation practices

23. Are optical fibres sensitive to damage?

- i. Yes

24. How can the damages to the cables be avoided?

- i. Handle the cable carefully
- ii. Store the cables carefully
- iii. Make proper connections to avoid any damage
- iv. Protect the outer covering to avoid any damage
- v. Do not bend the cable too much

25. What is the effect of damages on the cables?

- i. Signal loss
- ii. No signal

26. What precautions should be taken during cable unloading?

- i. Must not drop the cable drum on the floor which can cause damage to the cable.
- ii. Roll the drum from the truck on to the receiving platform, and this needs to be done at the same height.
- iii. Fork lift can act as an alternative to unloading the drums from the truck.
- iv. Do not lose control while rolling the drums.
- v. Before handling the next drum, roll the drum away from the bottom of the ramp.

27. How should the drum inspection be done?

- i. Test the drum for attenuation and damage, before taking them to a site.
- ii. Make sure that flanges are stencilled.
- iii. Examine the above points of drums before dispatching.
- iv. Always have a backup-drum.

28. What are the steps involved in the laying of an OFC?

- i. Mark two adjacent circles of 1.5 to 2-meter diameter on the floor in such a way that they make figure 8.
- ii. Put pulled cable from pole or pay-out trailer over this mark forming one above another layer.
- iii. For longer cables make more than one figure eight coils. This will make it easy to turn over coils for pulling in another direction.
- iv. Turning figure 8 loop requires minimum three persons one at centre and one at each ends of circle.
- v. Control winding of cable either by hand or with cable drum brake to avoid free running or jerking of the cable

29. What is trenching? List the steps involved.

- i. Trenching is a process of making a hole, placing a cable into it and then refilling the hole.
- ii. Digging is done to install 4 inch plastic pipe or duct for cable installation
- iii. Directional boring is used to dig without affecting surface
- iv. A marker tape is installed for any future installation or digging operation
- v. Machines are used for trenching in large area
- vi. A trench should be made under 4 inch width and depth as per standard

30. List the precautions to be taken during trenching.

- i. The cable should be buried at an undisturbed place.
- ii. The cable should be properly placed in road side trenching and future extending must not affect it.
- iii. The route which should not be affected by any natural process like drainage or other causes.
- iv. A label should be kept indicating to others that the OFC has been installed.

31. What is aerial cable and what are the steps to install the same?

- i. For longer durability and over the pole installation of cable, aerial cabling method is used
- ii. These cables are needed to be handled carefully, because these are light weight products and they need to be kept away from stress.
- iii. Cables in aerial runs can be damaged by the wind, ice, stretch and pulling.
- iv. While installation, external support is a must.
- v. This process uses strong wires which are used to secure the cable.
- vi. The cable is lashed for protection. The lashers are chosen with the use of lashing tools. It is an armor buffered tube

32. What are the steps of installing a duct?

- i. The ducts are kept with direct cable for further use.
- ii. Ducting can be done through a manual or a mechanical process.

- iii. A duct is made up of PVC material.
- iv. A duct must be twice the diameter of an OFC.
- v. It should have ropes and tapes for future use.
- vi. Ducts are coated with inner lining to protect the OFC from rubbing.
- vii. Various colors of lining are available for identity purpose.
- viii. The length of duct is measured by the installer and it needs to be accurate and placed in proper position.
- ix. The duct is inserted via the refilling way and restored using glass or tiles.
- x. Make sure the ducts are clean and the ends are sealed properly.
- xi. Make sure the ducts are airtight.

33. What is an inner duct and what is its purpose?

- i. Inner duct is used to provide a protecting coating to the optical fibre. It provides cushioning and a protective area from any environmental and manmade factors which could possibly effect the optic cable.
- ii. Its purpose is to provide protection to the optic cable
- iii. It reduces chances of any stress on the cable

34. What is figure '8ing' and OFC pulling?

- i. Mark two adjacent circles of 1.5 to 2-meter diameter on the floor in such a way that they make figure 8.
- ii. Put pulled cable from pole or pay-out trailer over this mark forming one above another layer.
- iii. For longer cables make more than one figure eight coils. This will make it easy to turn over coils for pulling in another direction.
- iv. Turning figure 8 loop requires minimum three persons one at centre and one at each ends of circle.
- v. Control winding of cable either by hand or with cable drum brake to avoid free running or jerking of the cable

35. What is cable blowing and what are its steps?

- i. Cable is inserted in the motorized blower head with a duct and a one way valve
- ii. High speed airflow is pushed along the cable from a source
- iii. Moving air force pushes the cable and makes it move forward
- iv. High air drag and low friction causes the cable to move forward
- v. Quick installation with less damage to cable and less manpower

36. List the steps involved in cable termination.

- i. Put on a fibre boot.
- ii. Measure 14 cm for striping as per specifications.
- iii. Strip the fibre using a wire stripper.
- iv. Use alcohol wipes to clean any residue.

- v. Give the fibre a very slight bend.
- vi. Put the fibre in a cleaver holder at 10.5 cm mark (as per specs) and cleave the fibre.
- vii. Put the fibre in the connector and squeeze the holder.
- viii. Slide the boot and the connection is complete.



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Transforming the skill landscape

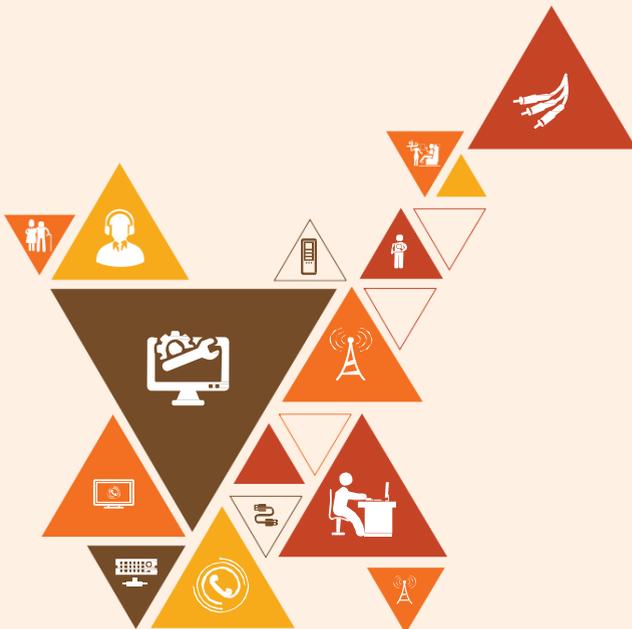


4. Optical Fibre Health and Safety

Unit 4.1 – Safety Policies and Guidelines

Unit 4.2 – Personal Safety

Unit 4.3 – First Aid and Fire Emergency



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Key Learning Outcomes

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

1. List the precautions while working with an optical fibre
2. Identify the complexities associated with fibre handling
3. List the optical fibre laser precautions
4. List the optical fibre fire precautions
5. Identify the personal protective equipment (PPE) related to fibre optic
6. Describe the workmanship safety guidelines
7. List the important safety guidelines for a workman

UNIT 4.1: Safety Policies and Guidelines

Unit Objectives

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

1. List the precautions that need to be taken while working with an optical fibre
2. List the optical fibre fire precautions
3. Identify the safety and warning signs
4. List the safety policies and guidelines

Resources to be Used

- Available objects such as a duster, pen, notebook, projector and other teaching aids
- Presentation slides
- Multimedia

Say

Good Morning and warm welcome to this training program. Before we begin a new session on Optical Fibre Cable handling precaution, let us revise the previous session.

Do

- Begin with revising the things explained in previous session.
- Encourage the participants to give answers, if they have any doubt clarify it and tell them about what they are going to study in new session.

Say

Let us start a new session on Optical fibre cable handling precaution.

Ask

Ask the participants whether they know about Optical fibre cable handling precaution.

Notes for Facilitation

- Explain to the participants that it is very important to understand the safety hazards associated with installation or maintenance of optical fibre cables.
- Tell them that failure to follow safety regulations can lead to fatal consequences.

- Tell them that processes such as fibre termination and splicing create broken ends of fibres.
- Tell them that these ends are very sharp and can easily penetrate the skin leading to infection.
- Tell them that precautions while handling optical fibre are as follows:
 - Avoid sticking the broken ends of fibre into your fingers.
 - Take care not to drop fibre pieces on the floor.
 - Always dispose of the scraps properly.
 - Avoid eating or drinking at work.
 - Place safety signs at hazard areas.
- Explain that splicing and termination processes involve the use of chemical cleaners and adhesives.
- Tell them that precautions while working with chemicals are as follows:
 - Always work in well-ventilated areas.
 - Avoid prolonged exposure to vapour fumes.
 - Avoid skin contact with chemicals.
 - Avoid using chemicals that cause allergic reactions.
 - Store all chemicals in marked containers and label them properly.
- Tell them that they should take the following fire safety precautions:
 - Ensure there are no flammable gases nearby when splicing fibre.
 - Never do splicing near manholes.
 - Never smoke at work.

UNIT 4.2: Personal Safety

Unit Objectives

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

1. Identify the personal protective equipment (PPE)
2. Describe the workmanship safety guidelines
3. List the important safety guidelines for an optical fibre splicer

Resources to be Used

- Available objects such as a duster, pen, notebook, projector and other teaching aids
- Presentation slides
- Multimedia
- Protective equipment such as helmet, gloves, goggles and so on.

Say

Good Morning and warm welcome to this training program. Before we begin a new session on optical fibre workman safety, let us revise the previous session.

Do

- Begin with revising the things explained in previous session.
- Encourage the participants to give answers, if they have any doubt clarify it and tell them about what they are going to study in new session.

Say

Let us start a new session on optical fibre workman safety.

Ask

Ask the participants whether they know about optical fibre workman safety.

Demonstrate

- Demonstrate the correct way of wearing PPE

Notes for Facilitation

- Explain that it is very important for them to use safety equipment while working as they provide protection to various parts of their body.
- Explain the full form of the term 'PPE'.
- Tell them the following points:
 - Goggles provide protection to eyes from hazards such as electric sparks, minute flying particles, dust and so on.
 - Helmets provide protection to head from injuries due to falling objects and slipping and tripping.
 - Gloves provide protection to hands from hazards such as harmful substances, cuts and abrasions, chemical or electrical burns and so on.
 - Shoes provide protection to feet from hazards such as falling heavy objects, hot, wet and slippery floor and so on.
 - Ear plugs provide protection to hearing from extremely high noise levels.
- Tell them that there may be chances of invisible laser radiation being present in live cables so, they should take the following laser safety precautions:
 - Avoid staring at the fibre end.
 - Always wear safety glasses while working.
- Tell them that a major safety issue of working with optical fibres is eye safety.
- Tell them that while doing fibre termination or splicing, they will be exposed to fibre scraps and cleaved ends.
- Tell them that it is very important to wear safety glasses to ensure that the fibre scraps do not get into eyes.
- Tell them about the safety guidelines they should follow during duct and aerial installation.
- Tell them about the important safety guidelines that they should follow when working with optical fibres.

UNIT 4.3: First Aid and Fire Emergency

Unit Objectives

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

1. List the first aid techniques
2. Identify the fire hazards and types of fires
3. Describe the emergency procedure and evacuation plan

Resources to be Used

- Available objects such as a duster, pen, notebook, projector and other teaching aids
- Presentation slides
- Multimedia
- First aid kit and different types of fire extinguishers.

Say

Good Morning and warm welcome to this training program. Before we begin a new session on optical fibre first aid and fire emergency, let us revise the previous session.

Do

- Begin with revising the things explained in previous session.
- Encourage the participants to give answers, if they have any doubt clarify it and tell them about what they are going to study in new session.

Say

Let us start a new session on optical fibre first aid and fire safety.

Ask

Ask the participants whether they know about first aid and fire safety.

Demonstrate

- Demonstrate the correct way of handle situations such as electrocution, fire and injury.

Notes for Facilitation

- Explain that it is very important for to know basic first aid techniques to use them in case of any accident or injury while working.
- Explain the basic steps to take while handling a person who is under influence of electrocution. The following steps can be performed to do so:
 - a. Shut down the power supply mains
 - b. Use materials which does not conduct electricity to free the person such as wooden stick
 - c. Free the person away from the power source
 - d. Call the ambulance
 - e. Check the condition of the person and provide basic first aid
- Tell them that in case of any accident such as cut or wound due to any sharp object, provide basic first aid quickly.
- Tell them that the on-site mechanical safety plan for a technician includes the following measures:
 - Safe work area
 - Safe use of tools and equipment
 - Safe practices for personnel protection
 - Awareness of safety hazards and how to avoid them
- Tell them that misuse and improper maintenance of hand and power tools can cause potential hazards.
- Also, explain that power tools are extremely hazardous when used or maintained improperly. The workers using hand and power tools may be exposed to several hazards including the following:
 - Objects that are abrasive or can splash
 - Harmful dusts, fumes, mists, vapours and gases
 - Frayed or damaged electrical cords
 - Hazardous connections and improper grounding

Say

- Give them some worst-case scenarios as the following and ask them to brainstorm for the solutions:
 - What would they do if a fire accident happens while working?
 - What if a hurricane hit their building head-on?
- Once they have identified potential emergencies, ask them to consider how these would affect them and how they would respond.

Notes for Facilitation

- Tell them that an emergency action plan covers designated actions that the employers and employees must take to ensure employee safety from fire and other emergencies. Not all employers are required to establish an emergency action plan. Also, putting together a comprehensive emergency action plan that deals with all types of issues specific to a worksite is not difficult.
- Explain to them that when developing an emergency action plan, it is a good idea to look at a wide variety of potential emergencies that could occur in a workplace. It should be tailored to the worksite and include information about all potential sources of emergencies. Developing an emergency action plan means one should do a hazard assessment to determine what, if any, physical or chemical hazards in the workplace could cause an emergency. If there is more than one worksite, each site should have an emergency action plan.
- Further, tell them that the emergency action plan must include the points as shown in the following figure:

A preferred method for reporting fires and other emergencies

An evacuation policy and procedure

Emergency escape procedures and route assignments, such as floor plans, workplace maps and safe or refuge areas

Names, titles, departments and telephone numbers of individuals, both within and outside the company, to contact for additional information or explanation of duties and responsibilities under the emergency plan

Procedures for employees who remain to perform or shut down critical plant operations, operate fire extinguishers, or perform other essential services that cannot be shut down for every emergency alarm before evacuating

Rescue and medical duties of workers designated to perform them

Fig 4.3.1: Emergency action plan

- **Activity Handling Strategy:**

Divide the number of participants in two groups. Ask each group the questions one by one. When one group answers a question, ask the other group if they are right. The answers of the questions are given as follows:

- 1. To pick broken or stray pieces of fibre we must use:**

- Tweezers

- 2. While working in manholes during any fibre optic activity:**

- We should not carry an inflammable material or fire hazard.

- 3. While working with fibre optic we should use:**

- Leather gloves and protective eye-wear

- 4. What optical fibre handling precautions must be followed?**

The precautions are:

- Maintain distance while looking at the end of an optical fibre.
- Avoid splicing in places such as manholes where gases accumulate.
- Keep all combustible materials away from the splicing area.
- Do not allow smoking around the work area because of explosion risk.
- Keep the splicing temperature-controlled and spotlessly clean to ensure good splicing.

- 5. What laser precautions must be followed?**

The laser precautions are:

- Do not stare into laser with naked eye.
- Wear protective eye-wear while working with laser.

- 6. What fire safety precautions should be followed?**

Certain fire safety precautions are:

- See if there is a risk of fire near the work area.
- Be alert and keep the work area clutter free.
- Ensure that all exits are clear and easily accessible during an emergency evacuation.
- See and report if any fire-fighting equipment such as sand bucket or a fire extinguisher is missing or not working.
- Ensure all safety equipment is well maintained by the concerned authority and report in case of negligence.
- Ensure people do not smoke near electrical equipment, machinery or any other such material which may catch fire easily.

- 7. What workmanship related precautions should be followed?**

Some precautions that should be followed are:

Cable bending radius

- Do not bend a cable beyond minimum bending radius this may result into sudden breaking. Bending radius of a cable is greater than 20D.

Cable pulling tension

- Exceeding the cable pulling tension beyond the defined value in the cable data sheet / specification can alter cable and fibre characteristics.

Manhole / Underground vaults safety

- Test the manhole atmosphere with an approved test kit for flammable and poisonous gases.
- Avoid devices that produce spark or flame in manhole.

Safety during duct installation

- Set up barricades, manhole guards and warning signs.
- Before pulling cable ensure the area inside the loop is clear of any personnel and equipment.



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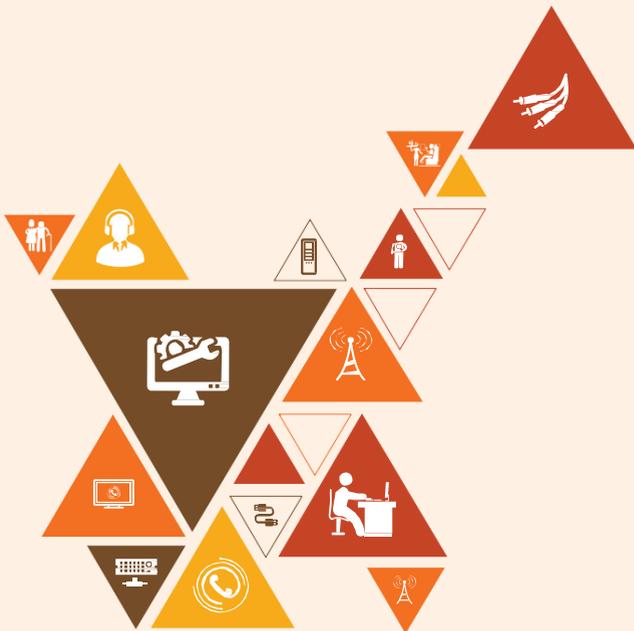
5. Soft Skills

Unit 5.1 – Grooming

Unit 5.2 – Communication Skills and team Work

Unit 5.3 – Documentation and Reporting

Unit 5.4 – Time Management and Problem Solving



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TEL/N6401

Key Learning Outcomes

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

1. Describe and demonstrate grooming techniques
2. List the importance of grooming and personal hygiene
3. Explain and outline the need for effective communication as an Optical Fibre Cable (OFC) technician
4. Describe and demonstrate effective process of communication at your work place
5. Display different types of communication
6. Demonstrate effective listening skills in your day-to-day life
7. Identify team work and its importance
8. Explain the documentation process
9. Identify the steps in documentation
10. Explain the reporting procedure
11. Explain and outline time management and its benefit
12. Explain and outline various time wasters as stumbling blocks
13. Demonstrate effective time management skills by using building blocks
14. Understand and demonstrate effective problem-solving skills
15. Explain and outline benefits of problem solving

UNIT 5.1: Grooming

Unit Objectives

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

1. Describe and demonstrate grooming techniques
2. List the importance of grooming and personal hygiene

Resources to be Used

- Available objects such as a duster, pen, notebook, projector and other teaching aids
- Presentation slides
- Multimedia

Say

Good Morning and warm welcome to this training program. Before we begin a new session on grooming, let us revise the previous session.

Do

- Begin with revising the things explained in previous session. Ask the following questions:
- Encourage the participants to give answers, if they have any doubt clarify it and tell them about what they are going to study in new session.

Say

Let us start a new session on grooming.

Notes for Facilitation

- Explain the importance of personal grooming.
- Explain that an optical fibre splicer should practice the following good grooming habits:
 - Neat dressing
 - Personal hygiene
 - Workplace etiquette

- Explain that the domestic electrician should demonstrate disciplined behaviour at all times and should ensure the following habits:
 - They are always punctual.
 - They complete tasks as per the given time and standards
 - They should not gossip about others and idle away time
- Explain that social grace implies manners, enthusiastic, patience, friendly and courteous.
- Explain that etiquette refers to being professional, honest, ethical, loyal hard working and responsible.

UNIT 5.2: Communication Skills and Team Work

Unit Objectives

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

1. Explain and outline the need for effective communication as an Optical Fibre Cable (OFC) technician
2. Describe and demonstrate effective process of communication at your work place
3. Display different types of communication
4. Demonstrate effective listening skills in your day-to-day life
5. Identify team work and its importance

Resources to be Used

- Available objects such as a duster, pen, notebook, projector and other teaching aids
- Presentation slides
- Multimedia

Say

Good Morning and warm welcome to this training program. Before we begin a new session on communication skills, let us revise the previous session.

Do

- Begin with revising the things explained in previous session.
- Encourage the participants to give answers, if they have any doubt clarify it and tell them about what they are going to study in new session.

Say

Let us start a new session on communication skills.

Activity

- Divide the number of participants in two groups.
- Group A Topic → Internal communication with colleagues
 - Situation → You have to hand over an installation work which is incomplete to your colleague.
 - What information will you share with him/her?

- Group B Topic → Encouraging internal communication with colleagues
 - Situation → You have to encourage colleagues to share information among them.

Time

- Set five minutes as the time limit of the activity.
- Ensure that the activity finishes within time

Notes for Facilitation

- Explain to the participants that the sender of a message is someone who has a need to communicate with another person, the receiver of the message.
- Discuss with the participants how communication is said to be complete when the receiver understands the message in the context in which it was meant to be understood.
- Explain to the participants, the use of language and basic communication skills, such as how to:
 - Enunciate their words.
 - Pronounce the words correctly.
 - Use the right words.
 - Slow the speech down.
 - Develop their voice.
 - Animate their voice
 - Have courage to say what they think.
- Tell the participants that communication is of the following types:
 - **Verbal Communication** – It mainly consists of spoken words, such as, a domestic electrician talking to team members or talking on phone with the customer.
 - **Non-verbal communication** – It consists mainly of gestures, facial expressions and movements. When an electrician shows thumbs up or waves to an assistant who is far away to say that the connection of wiring is done or to come closer with the cord, it is an example of non-verbal communication.
 - **Written communication** – It is the written form of communication such as, reports, analysis and e-mails. A wiring diagram, which is a written document, a report which has been submitted or applications that have been filled, all are examples of written communication.

- Explain participants about some basic dos and don'ts of communication using the points as shown in the following table:

Dos	Don'ts
Communication should be very clear and precise. Mention all the details required to take action. Also, mention clearly the action intended.	Do not communicate when not sure. Also, never give incorrect details.
Communication should be concise or short. It should not have irrelevant details which are of no concern to the recipient of the message.	Never give incomplete message.
Communication should be concrete. Mention the specific and actionable things.	Never communicate in an un-courteous way
The message in communication should be coherent or should be related. If something extra has to be mentioned, clearly specify that it is an addition.	Refrain from using jargons that the recipient may be unfamiliar with. Avoid using complex words or sentences.

- Explain to the participants that they need to listen actively to ensure that they can respond and understand efficiently.
- Explain that to be a good listener, they should take care of the following points:
 - Understand and use non-verbal communication
 - Listen and acknowledge
 - Reflect on what has been said

- Explain that active listening reduces conflicts between people working together, reflects a caring attitude, increases the rate at which work is being done and decreases a scope of duplication of efforts. For this, they need to pay attention to the points as shown in the following figure:

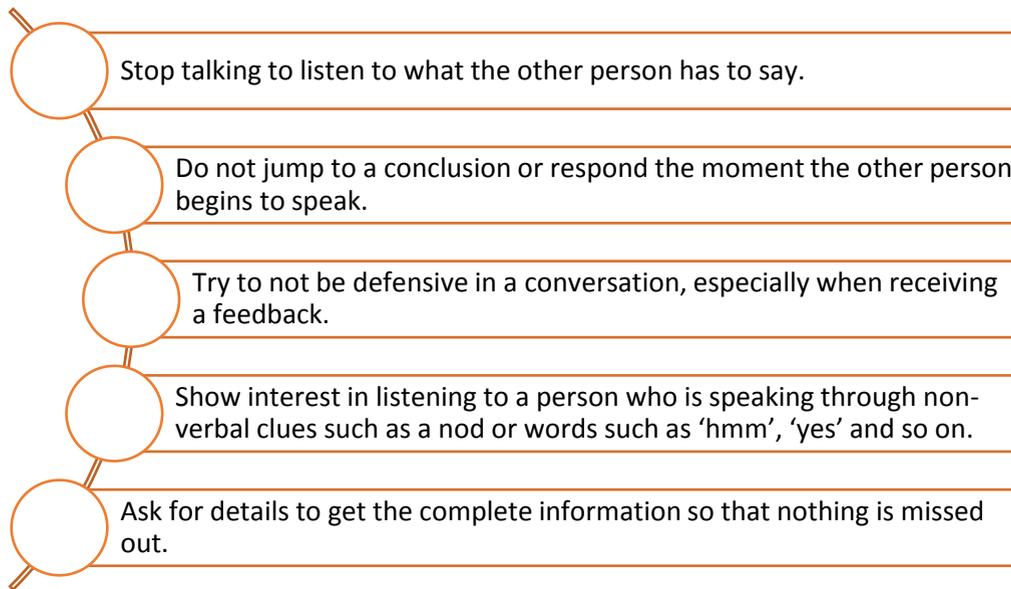


Fig. 5.2.1: Active listening

Do

- Draw the following figure on the whiteboard to explain the steps to effective listening:

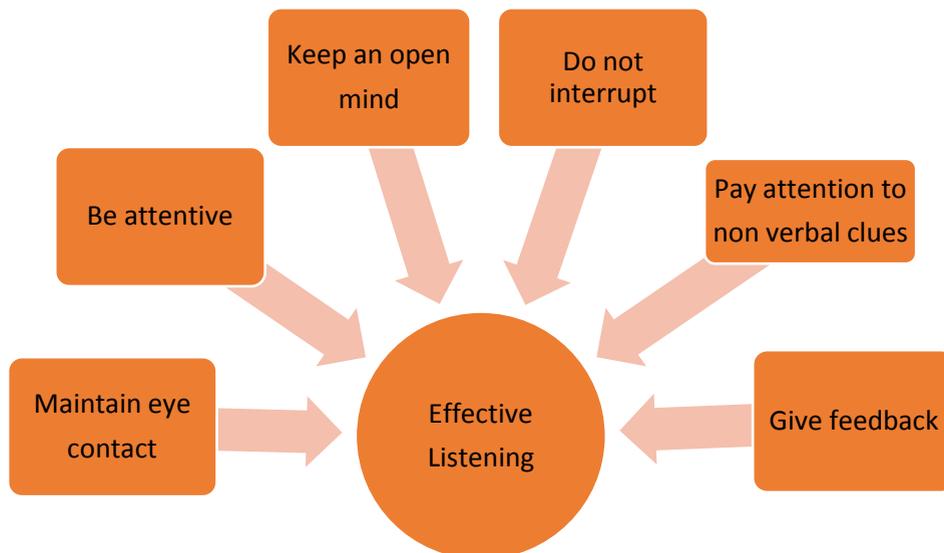


Fig. 5.2.2: Steps to effective listening

- Take the points one by one and explain the concept with the help of day to day examples.

- Explain that to be effective, their communication should include the following aspects:
 - What they saw
 - What they heard
 - What they felt
 - What they want
 - What will be the result
- Inform them that it is important to understand the role and responsibility of each one of the team members and the task being performed by that person.
- Explain that teamwork is defined as coming together of people to achieve common goals. The goals here are the organizational goals. The daily tasks which are assigned are a part of the organizational goals. Team work means that each member in the team is contributing their bit to the overall tasks.

Tell that in a team, all the members are important and might be dependent on each other for work. Sometimes, the members do the work individually. However, the collective result is a team effort, similar to what will be seen in a game of cricket, or during the construction of a building or building an aircraft. It is also important to understand that the work may depend on the completion of the tasks. Therefore, for smooth progress of work, the tasks should be completed on time.

UNIT 5.3: Documentation and Reporting

Unit Objectives

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

1. Explain the documentation process
2. Identify the steps in documentation
3. Explain the reporting procedure

Resources to be Used

- Available objects such as a duster, pen, notebook, projector and other teaching aids
- Presentation slides
- Multimedia

Say

Good Morning and warm welcome to this training program. Before we begin a new session on documentation and reporting, let us revise the previous session.

Do

- Begin with revising the things explained in previous session.
- Encourage the participants to give answers, if they have any doubt clarify it and tell them about what they are going to study in new session.

Say

Let us start new session, documentation and reporting

Ask

Ask the participants whether they know about documentation and reporting.

Notes for Facilitation

- Explain to the participants about the factors that they need to consider while doing documentation which are listed as follows:
 - What records need to be kept?
 - How are they to be stored – such as hard copy or electronic?
 - Where are the documents to be stored?
 - How long should the records to be retained? (what is an appropriate time; think about the shelf-life of the product and possibly how the product may be misused)
 - Who is responsible for the records?
 - Who needs frequent access to the records?
- Tell them that the documentation of critical incidents, whether positive or negative, is also recommended so that the managers have a record of employee performance spanning a period of time.
- Further, explain to them that documentation is used in other ways in organizations. These can include procedures, work instructions and computer software instructions, to name a few; but for purposes of the Human Resources function, these are the common uses of documentation. And, these are instructions about how to document appropriately.
- Explain about the advantages of documentation which are listed in the following figure:

Easier to recall what happened if complaint is filed well after an incident occurred

Reduced amount of incorrect information discussed in a case

Possibility to save time and money on a lawsuit

Ability to protect employees and/or the company from invalid complaints

Fig 5.3.1 Advantages of documentation

UNIT 5.4: Time Management and Problem Solving

Unit Objectives

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

1. Explain and outline time management and its benefit
2. Explain and outline various time wasters as stumbling blocks
3. Demonstrate effective time management skills by using building blocks
4. Understand and demonstrate effective problem-solving skills
5. Explain and outline benefits of problem solving

Resources to be Used

- Available objects such as a duster, pen, notebook, projector and other teaching aids
- Presentation slides
- Multimedia

Say

Good Morning and warm welcome to this training program. Before we begin a new session on time management, let us revise the previous session.

Do

- Begin with revising the things explained in previous session.
- Encourage the participants to give answers, if they have any doubt clarify it and tell them about what they are going to study in new session.

Say

Let us start new session, time management.

Ask

- Ask the participants if they know about the definition of time management.
- Ask them if they know about the term time.
- And again ask them what the difference between urgent and important is.
- Ask them what the ways to improve time management skills are.

Activity

- Conduct a group discussion.
- Direct the discussion on how to prioritize work and manage time effectively.

Notes for Facilitation

- Define time management as the management of time in order to make the most out of it.
- Define time as the duration in which all things happen, or a precise instant when something happens.
- In addition, tell the participants about the differences between urgent and important.

Urgent	Important
Urgent' tasks demand your immediate attention, but whether you actually give them that attention may or may not matter.	Important' tasks matter, and not doing them may have serious consequences for you or others.

- Explain about the ways to improve time management skills.
- Explain that the ten ways to improve management skills are:
 - Delegate Tasks
 - Prioritize Work
 - Avoid Procrastination
 - Schedule Tasks
 - Avoid Stress
 - Set up Deadlines
 - Avoid Multitasking
 - Start Early
 - Take Some Breaks
 - Learn to Say No
- Explain to the participants that time management is important as:
 - Time is limited
 - More can be accomplished with less effort
 - Improved decision-making ability
 - Greater success in career
 - Learning opportunities are everywhere
- Tell the participants about the problem solving process and its steps. Use the following pointers to explain the steps:
 - The first step in a problem solving process is to identify the problem.
 - Then, gather details about the problem and its possible solution. The more data you have the better decision making you can do.

- Third step is to analyse the problem. You may need to use mathematical or statistical tools to arrive at a point, which will help you to take a decision.
- Develop alternatives, which will help to have a plan B in case plan A does not work.
- Finally, choose the best option.
- Then, tell the participants about some benefits of problem solving, such as:
 - It is based upon previous knowledge and they will learn from it.
 - It will help them to understand the process and suggest improvements by eliminating the waste.
 - It requires them to be thorough with the process and also be updated with new developments.
 - Critical and reflective thinking will help to spot the process disruptions and the reasons for it.
 - Analyse the reason for the delay and how the improvements can be done.
 - The problem solving process can be defined as given in the following figure:

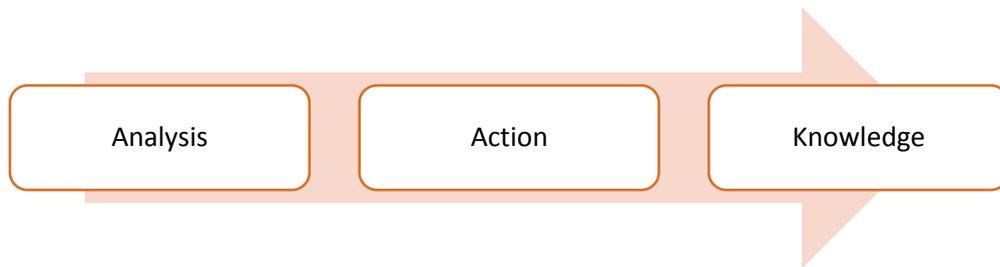


Fig. 5.4.1: Problem solving

- **Activity Handling Strategy**
Divide the number of participants in two groups. Ask each group the questions one by one. When one group answers a question, ask the other group if they are right. The answers of the questions are given as follows:
 1. **For a professional appearance and a healthy mind and body, it is essential that we:**
 - Keep ourselves clean and well-groomed
 2. **It is essential that our uniform is:**
 - Neat and clean
 3. **While receiving instructions from our supervisors, it is important that:**
 - Listen attentively, without interruption and towards the end check our understanding
 4. **Written communication is best used in:**
 - Reporting and documentation
 5. **People who listen attentively:**
 - Are able to understand much better and hence their performance increases
 6. **While communicating at work, it is important:**
 - That we are serious
 - We smile appropriately and make affirmative sounds/gestures
 - That we stand in a disciplined manner with our hands folded

- 7. While communicating at work, we should be careful about our:**
- Words
 - Body Language
 - Pitch and tone
- 8. While communicating at work, we should:**
- Have clear thought and speech
- 9. Effective communication at work place results in:**
- Less confusion
 - Proper understanding of the tasks and expectation
 - Better environment, coordination and team work
- 10. Effective communication at work place means:**
- That words, both written and spoken are extremely important
- 11. What is grooming?**
- Grooming is dressing up in proper manner, which includes combed hair and trimmed beard.
- 12. List out the importance of grooming.**
- Importance of grooming is:
- Professionalism
 - Sophistication
 - Intelligence (perceived)
 - Credibility or reliability (perceived)
 - Respect
- 13. What is communication process?**
- The three steps of communication process are:
- Thought
 - Encoding
 - Decoding
- 14. Briefly explain various types of communications.**
- The types of communication are:
- Verbal Communication**
- Language plays a significant role in verbal communication. In order to describe events, ideas, products, a person needs words - symbols that stand for thoughts - categorized in useful patterns.
- Written Communication**
- Written communication is important because a message written in black and white can be used as a record. A written document is referred to in the absence of a person and therefore it must be fool proof.
- Non-Verbal Communication**
- Nonverbal communication is a commonly used method. The examples are anger, smile and affection.
- 15. What are the C's of effective writing?**
- C's of effective writing are:
- Clear
 - Coherent
 - Concise

16. Explain non-verbal communication.

Nonverbal communication is a commonly used method. Its examples are anger, smile and affection. Following are some non-verbal communication clues:

- Body language.
- Emotion of the sender and receiver.
- Perceptions due to prior interactions.

17. How many different types of people are there when we talk about problem-solving skills?

The types of people having different problem-solving skills are:

- **The Independents** – This type of people look at a problem and solve it in their own right away.
- **The Thinkers** – These are the ones who think critically about any situation before making a final decision.
- **The Askers** – These are the people who ask others for the answer to make sure that they're solving the problem the "right way."

18. Explain the steps involved in problem-solving?

The steps involved in problem-solving are:

- Define the problem and expected results
- Collect facts and ideas
- Generate solutions
- Pick the best solution
- Implement the solution
- Evaluate the solution

19. What is creative problem-solving? Explain the stages of creative problem-solving?

Creative problem solving is a method in which opportunities are identified and problems are solved when conventional methods of solving a problem become ineffective. It requires a completely new approach and innovative ideas to get a plan to reach at the solution of the problem.

The 4 stages of creative problem-solving are:

- Preparation
- Incubation
- Illumination
- Verification



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6. Employability & Entrepreneurship Skills

Unit 6.1 - Personal Strengths & Value Systems

Unit 6.2 - Digital Literacy: A Recap

Unit 6.3 - Money Matters

Unit 6.4 - Preparing for Employment & Self-Employment

Unit 6.5 - Understanding Entrepreneurship

Unit 6.6 - Preparing to be an Entrepreneur



Introduction: Employability and Entrepreneurship Skills

This Facilitator's guide includes various activities which will help you as a facilitator to make the sessions participative and interactive.

Ice breaker

- You can begin the module with the following ice breaker:

Five of Anything Ice Breaker Steps:

- Divide the participants into groups of four or five by having them number off. (You do this because people generally begin a meeting by sitting with the people they already know best.)
- Tell the newly formed groups that their assignment is to share their five favourite movies of all time, their five favorite novels or their five least liked films. The topic can be five of anything - most liked or disliked.
- This ice breaker helps the group explore shared interests more broadly and sparks lots of discussion about why each person likes or dislikes their selected five.
- Tell the groups that one person must take notes and be ready to share the highlights of their group discussion with the class upon completion of the assignment.

Expectation Mapping

During the first session and after ice breaker session, ask the participants to answer the following question: "What do I expect to learn from this training?"

- Have one of the participants write their contributions on a flip chart sheet.
- Write down your own list of covered material in the training on another flip chart sheet.
- Compare the two sheets, commenting on what will and what will not be covered during the training.
- Set some ground rules for the training sessions. Ask the participants to put these rules on a flipchart and display it in the class.
- You may get back to those sheets once again at the end of the last session of the training.
- Benefits of doing this activity:
 - Participants feel better as their opinions are heard.
 - Participants get to know what they should expect from the training.
 - The facilitator gets to know which points to emphasize, which to leave out, and which to add during the training.
- Expectations from the participants:
 - Must sign the attendance sheet when they arrive for class.
 - Conduct themselves in a positive manner
 - Be punctual, attentive, and participative
- Explain the contents that are going to get covered one by one and connect it with the expectation mapping done earlier.
- By the end of this exercise, the participants should have a clear understanding of what to expect from the session and what are the areas that will not get covered.

Defining Objectives

1. Defining the objectives in the beginning of the units sets the mood for the unit.
2. To begin with the end in mind sets the expectations of the participants as what could be the important takeaways from the session.
3. It is also a way of making participants take responsibility of their own learning process.
4. For the facilitator, the objectives decide a designed path to progress on so that the learning stays aligned and on track.
5. Read the objectives slowly, one by one, and ask the participants to explain what they think it means.
6. At the end of the session, you could again revisit the objectives to find out from the participants about how many objectives have been achieved.

In order to effectively facilitate this workshop:

1. You must have thorough knowledge of the material in the Participant Handbook, and be prepared to answer questions about it.
2. You may also wish to read other material to enhance your knowledge of the subject.
3. There may be issues raised with which you are not able to deal, either because of lack of time or knowledge.

You can either state that you will obtain answers and get back to the participants with the information. In case the query can be turned to an assignment to the class, do so. You can work with the participants on the assignment.

4. You must have a very clear understanding of what the participants want to accomplish by the end of the workshop and the means to guide the participants.
5. As the facilitator, it is your responsibility to make sure that all logistical arrangements are made for the workshop. This may involve doing it yourself or confirming that someone else has made all necessary arrangements associated with the workshop. Assume nothing and check everything before the workshop begins.
6. To break the monotony and boredom during sessions, introduce mini breaks in the form of stretching exercises, jokes, some group songs or games.
7. Invite discussion from the participants.
8. Probe the participants further and lead them to come to affirmative conclusions.
9. Let the participants answer. No answer is incorrect.
10. Ask one participant to write all the points on the whiteboard.
11. Build the sessions from the answers provided by the class.
12. Prepare for the sessions in advance so that the resources like flipcharts, handouts, blank sheets of paper, marker pens, etc. can be kept ready.
13. Ensure that resources like board, markers, duster etc. is available before your session starts.

General instructions for role playing:

1. You are not being asked to be an actor or to entertain. The purpose of the role play is to provide a situation in which you can practice certain skills.
2. When you read the brief, try to imagine yourself in the situation described and behave in a way you feel to be natural – but be conscious of the fact that your role may require a different approach from that which you might normally use.
3. You (and others) may benefit from the change in approach and behavior. Therefore, try to use the approach you feel to be most appropriate for the circumstances described in your brief.
4. The brief is just the starting point. It simply sets the scene and the tone of session or activity. Try not to keep referring to the brief as this will affect the spontaneity of the meeting. Allow the role play to develop as you think it might in real life and change your reactions in line with the behavior and responses of others involved.
5. If you find that you have too little information to answer questions or to describe what has happened in the situation, do feel free to add your own thoughts and ideas. Try to keep these within the framework of the role you are taking and try to make your improvisations as realistic as possible.

UNIT 6.1: Personal Strengths & Value Systems

Key Learning Outcomes

At the end of this unit, you 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 Swachh 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

UNIT 6.1.1: Health, Habits, Hygiene: What is Health?

Unit Objectives

At the end of this unit, the 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 Swachh Bharat Abhiyan
6. Explain the meaning of habit

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 you as a health representative will 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.

UNIT 6.1.2: Safety

Unit Objectives

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

1. Discuss ways to set up a safe work environment
2. 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?

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.

UNIT 6.1.3: Self-Analysis- Attitude, Achievement Motivation: What is Self-Analysis?

Unit Objectives

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

1. Explain the importance of self- analysis
2. Discuss motivation with the help of Maslow's Hierarchy of Needs
3. Discuss the meaning of achievement motivation
4. List the characteristics of entrepreneurs with achievement motivation
5. List the different factors that motivate you
6. Discuss the role of attitude in self- analysis
7. Discuss how to maintain a positive attitude.
8. 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.

UNIT 6.1.4: Honesty & Work Ethics

Unit Objectives

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

1. Discuss the qualities of honest people
2. Describe the importance of honesty in entrepreneurs
3. Discuss the elements of a strong work ethic
4. 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

- 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.

UNIT 6.1.5: Creativity and Innovation

Unit Objectives

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

1. List the characteristics of highly creative people
2. 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.

Soring's idea is to have a centralized 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 Sebastiyar 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>

UNIT 6.1.6: Time Management

Unit Objectives

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

1. Discuss the benefits of time management
2. List the traits of effective time managers
3. 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

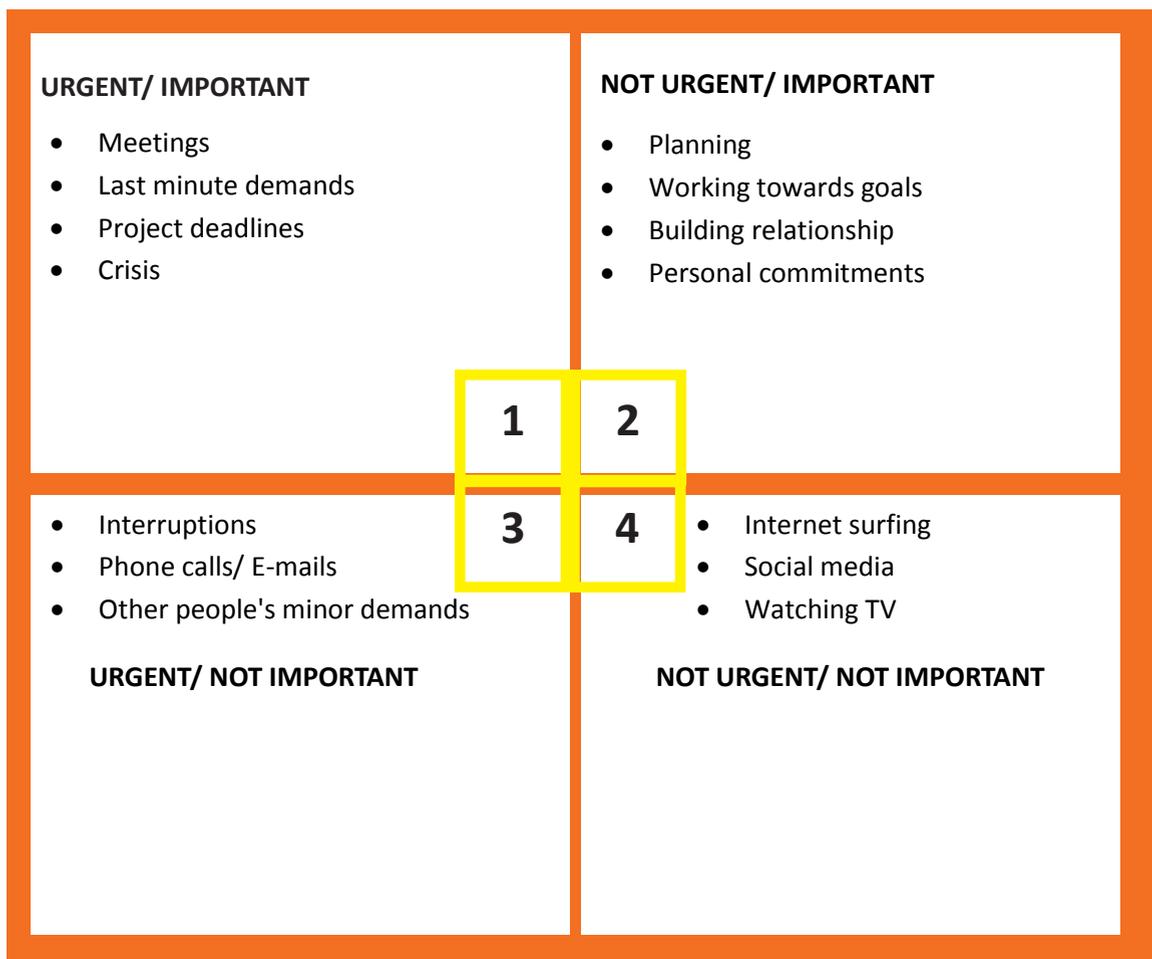
- You have to make a grid as shown on the board here.
- This grid has four boxes. As you can see, each box has a different heading.
- At the heart of the urgent-important grid, are these two questions:
 - Is this task important?
 - Is this task urgent?
- Now, you have to think about each activity that 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

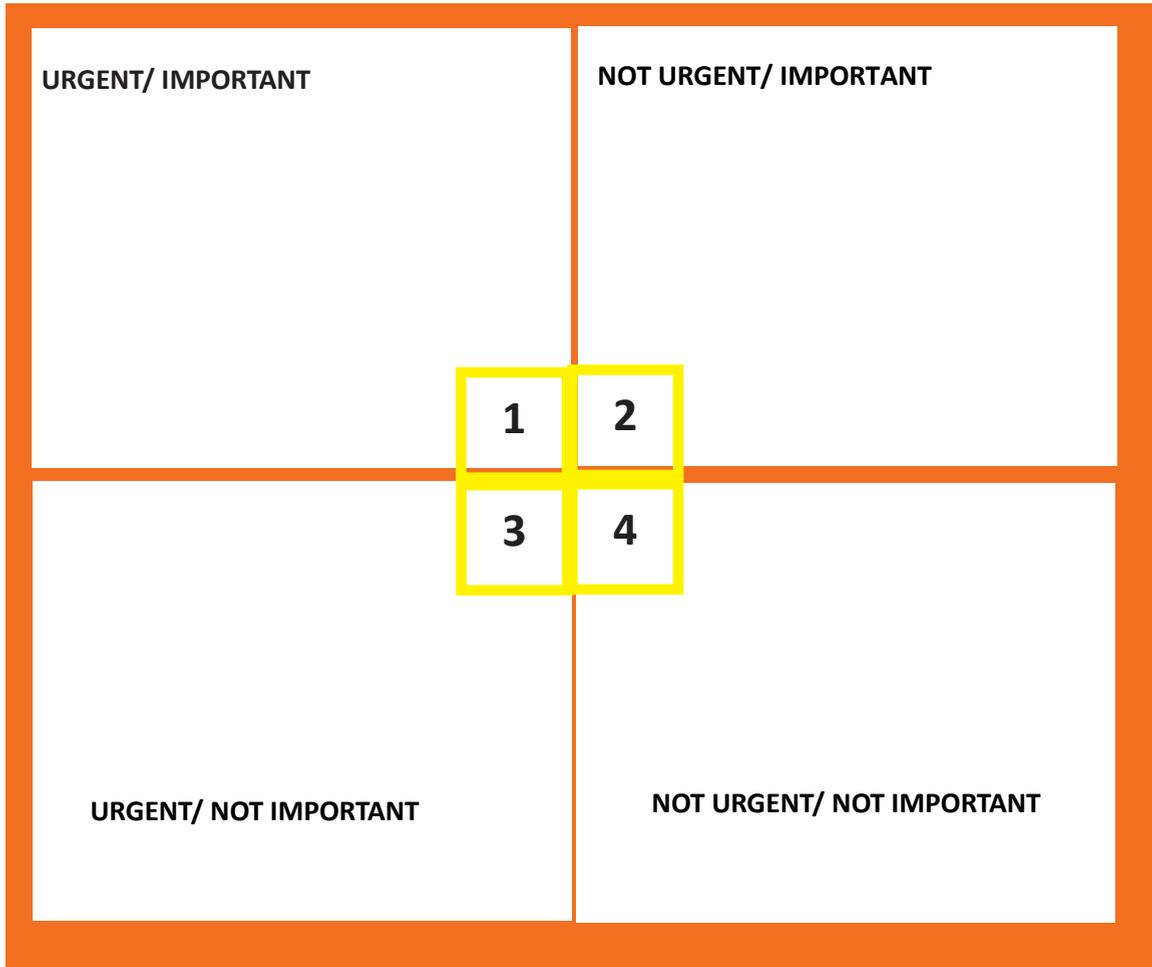
1.	
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15.	

URGENT-IMPORTANT GRID



URGENT/ IMPORTANT GRID format



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!" "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.

UNIT 6.1.7: Anger Management

Unit Objectives

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

1. Discuss the importance of anger management
2. Describe anger management strategies
3. 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.

UNIT 6.1.8: Stress Management: What is stress?

Unit Objectives

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

1. Discuss the causes of stress
2. Discuss the symptoms of stress
3. 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.

Summarize

- Close the discussion by summarizing the tips to manage stress as given in the Participant Handbook.
- 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 printed copies of the activities/ scenarios ready for the session.
- Put down the de-brief questions on a flip chart so that it can be displayed in the class during the activity.
- Encourage participation and make the discussions interactive.

UNIT 6.2: Digital Literacy: A Recap

Key Learning Outcomes

At the end of this unit, you 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

UNIT 6.2.1: Computer and Internet Basics: Basic Parts of a Computer

Unit Objectives

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

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.

UNIT 6.2.2: MS Office and Email: About MS Office

Unit Objectives

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

1. Discuss the main applications of MS Office
2. Discuss the benefits of Microsoft Outlook

Resources to be Used

- Participant Handbook
- Computer Systems with the required applications

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

UNIT 6.2.3: E-Commerce

Unit Objectives

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

1. Identify different types of e-commerce
2. List the benefits of e-commerce for retailers and customers
3. Discuss Digital India campaign will help boost e-commerce in India
4. Describe how you will sell a product or service on an e-commerce platform

Resources to be Used

- Computer Systems 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 6.3: Money Matters

Key Learning Outcomes

At the end of this unit, you 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

UNIT 6.3.1: Personal Finance – Why to Save?

Unit Objectives

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

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.

UNIT 6.3.2: Types of Bank Accounts, Opening a Bank Account

Unit Objectives

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

1. Discuss the main types of bank accounts
2. 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 need 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.

<div style="border: 1px solid black; width: 100px; height: 100px; margin: 0 auto;"></div> <p style="text-align: center; margin: 0;">Photograph</p>	<h1 style="margin: 0;">XXX Bank</h1>			
<h2 style="margin: 0;">SAVING BANK ACCOUNT OPENING FORM</h2>				
Account No.: _____	Date: _____			
Name of the Branch				
Village/Town				
Sub District / Block				
District				
State				
SSA Code / Ward No.				
Village Code / Town	Name of Village /			
Applicant Details:				
Full Name	Mr./Mrs./	First	Middle	Last Name
Marital Status				
Name of				
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				

Detail of Assets	Owning House : Y/N	Owning Farm :
	Y/N	
	No. of Animals :	Any other :
Existing Bank A/c. of family members / household	Y / N	If yes, No. of A/cs. _____
Kisan Credit Card	Whether Eligible	Y / N
I request you to issue me a Rupay Card .		
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

UNIT 6.3.3: Costs: Fixed vs. Variables: What are Fixed and Variable Costs?

Unit Objectives

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

1. 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

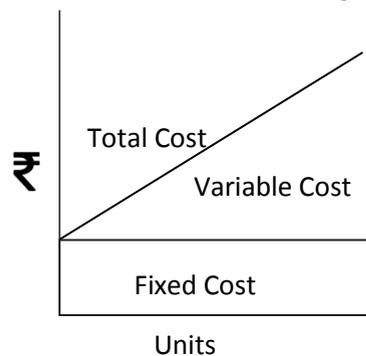
1. Rent
2. Telephone bill
3. Electricity bill
4. Machinery
5. Insurance
6. Office supplies/ Raw materials
7. Employee salaries
8. Commission percentage given to sales person for every unit sold
9. Credit card fees
10. Vendor bills

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.

Say

- We saw that your utility bills like rent, electricity, telephone etc. are all fixed costs because you have to pay it every month.
- Variable costs is an expense which varies with production output or volume. For example, commission, raw material etc.
- Discuss “Cost: Fixed vs. variables” with the participants as given in the Participant Handbook.
- Illustrate the relation between the costs with a graph.



- Let's learn the difference between fixed and variable cost with the help of an activity.

Team Activity

Fixed vs. Variable Costs

- **This is a group activity.**

- You want to start your own entrepreneur business.
- State the type of business you want to start.
- List down all the cost or requirements for your business.
- How will you differentiate between the fixed and variable cost.

Activity De-brief

- What is the total cost of your business?
- What are the fixed costs?
- What are the variable costs?
- How did you differentiate between the fixed and variable costs?

Do

- Instruct the participants that this is group work.
- Divide the class into small groups of 4 or 6.
- Give each group a sheet of paper.
- Tell the participants that they have to start their own entrepreneur business.
- Ask them the type of business they want to start.
- Instruct them to differentiate between the fixed and the variable costs of the business they want to start.
- 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

- 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)

UNIT 6.3.4: Investments, Insurance and Taxes

Unit Objectives

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

1. Describe the main types of investment options
2. Describe the different types of insurance products
3. 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. Mr. Das gets monthly return on one of his insurance policies. Name the policy?
Money Back Life Insurance
2. What are bonds?
Bonds are instruments used by public and private companies to raise large sums of money.
3. Who issues the bonds?
Private and public companies issue the bonds.

4. Why are bonds issued?
To raise large amount of money as it cannot be borrowed from the bank.
5. Who is the buyer of stocks and equities?
The general public is the buyer.
6. What types of scheme is the Sukanya Samriddhi Scheme?
Small Saving Scheme
7. 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.
8. Why is a loan taken from the bank to purchase real estate?
To lease or sell to make profit on appreciated property price.
9. Name the two types of insurances?
Life Insurance and Non-life or general insurance
10. Which insurance product offers financial protection for 15-20 years?
Term Insurance
11. What is the benefit of taking an endowment policy?
It offers the dual benefit of investment and 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.

UNIT 6.3.5: Online Banking, NEFT, RTGS, etc.

Unit Objectives

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

1. Discuss the uses of online banking
2. 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.

Say

- One of the biggest advantage that online banking offers, as discussed earlier, is transferring money from one account to another. This transaction is called electronic funds transfer. Electronic transfers are processed immediately with the transferred amount being deducted from one account and credited to the other in real time, thus saving time and effort involved in physically transferring a sum of money.
- Discuss “Electronic Funds Transfer” from the Participant Handbook.

Do

- Discuss how to transfer money from one account to another using online banking (NEFT/ RTGS, etc.).
- Illustrate with an example.

Summarize

- Close the discussion by summarizing the about online banking.
- Ask the participants if they have any questions related to what they have talked about so far.

UNIT 6.4: Preparing for Employment & Self-Employment

Key Learning Outcomes

At the end of this unit, you 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

UNIT 6.4.1: Interview Preparation: How to Prepare for an Interview?

Unit Objectives

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

1. 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.

UNIT 6.4.2: Preparing an Effective Resume: How to Create an Effective Resume?

Unit Objectives

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

1. 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 resume 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 resume.
- 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

UNIT 6.4.3: Interview FAQs

Unit Objectives

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

1. Discuss the most frequently asked interview questions
2. 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.

UNIT 6.4.4: Work Readiness – Terms and Terminology

Unit Objectives

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

1. 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 6.5: Understanding Entrepreneurship

Key Learning Outcomes

At the end of this unit, you 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

UNIT 6.5.1: Concept Introduction (Characteristic of an Entrepreneur, types of firms/ types of enterprises)

Unit Objectives

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

1. Discuss the concept of entrepreneurship
2. Discuss the importance of entrepreneurship
3. Discuss the characteristics of an entrepreneur
4. 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 etc.
- Discuss about various schemes and policies by the Government of India for entrepreneurs.

UNIT 6.5.2: Leadership and Teamwork

Unit Objectives

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

1. List the qualities of an effective leader
2. Discuss the benefits of effective leadership
3. 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.

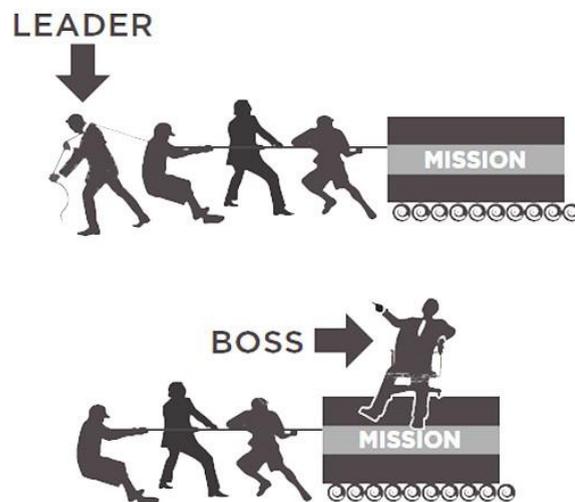


Fig 6.5.1: Difference between being a leader and a Boss

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 employee 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 employee 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.

UNIT 6.5.3: Communication Skills: Listening & Speaking: The Importance of Listening Effectively

Unit Objectives

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

1. Discuss the importance of listening effectively
2. Discuss how to listen effectively
3. Discuss the importance of speaking effectively
4. Discuss how to speak effectively

Resources to be Used

- Participant Handbook

Activity

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 si.

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



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

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 been 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.

UNIT 6.5.4: Problem Solving & Negotiation Skills

Unit Objectives

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

1. Discuss how to solve problems
2. List the important problem-solving traits
3. Discuss ways to assess problem solving skills
4. Discuss the importance of negotiation
5. 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 inviting 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. 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.
7. Encourage participants to provide constructive criticism during their discussions.

Summarize



- Wrap the unit up after summarizing the key points and answering questions.

UNIT 6.5.5: Business Opportunity Identification: Entrepreneurs and Opportunities

Unit Objectives

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

1. Discuss how to identify new business opportunities
2. 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.

UNIT 6.5.6: Entrepreneurship Support Eco-System

Unit Objectives

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

1. Explain the meaning of entrepreneur
2. Describe the different types of entrepreneurs
3. List the characteristics of entrepreneurs
4. Recall entrepreneur success stories
5. Discuss the entrepreneurial process
6. Describe the entrepreneurship ecosystem
7. Discuss the purpose of the 'Make in India' campaign
8. 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.

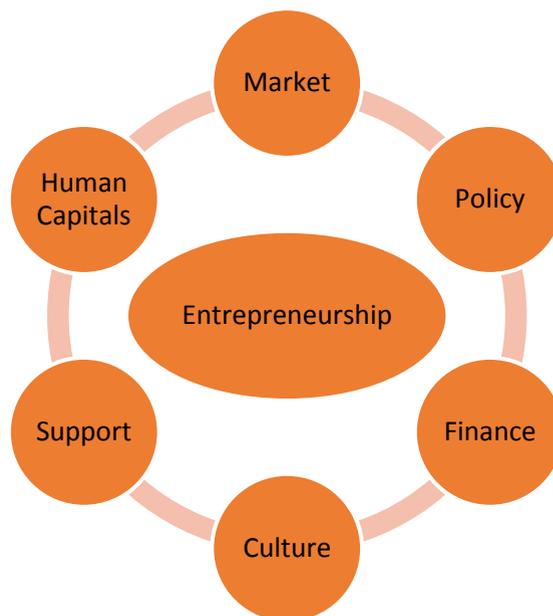


Fig 6.5.2:

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.

UNIT 6.5.7: Risk Appetite & Resilience

Unit Objectives

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

1. Discuss the relationship between entrepreneurship and risk appetite
2. Discuss the relationship between entrepreneurship and resilience
3. 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.

UNIT 6.5.8: Success and Failures

Unit Objectives

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

1. 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 6.6: Preparing to be an Entrepreneur

Key Learning Outcomes

At the end of this unit, you 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

UNIT 6.6.1: 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:

1. Discuss how market research is carried out
2. Describe the 4 Ps of marketing
3. 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.

UNIT 6.6.2: Business Entity Concepts

Unit Objectives

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

1. 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. 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

UNIT 6.6.3: CRM & Networking

Unit Objectives

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

1. Discuss the need for CRM
2. Discuss the benefits of CRM
3. Discuss the need for networking
4. 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.

UNIT 6.6.4: Business Plan: Why Set Goals?

Unit Objectives

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

1. Discuss the importance of setting goals
2. Differentiate between short-term, medium-term and long-term goals
3. Discuss how to write a business plan
4. Explain the financial planning process
5. 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.**

MY BUSINESS PLAN
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.

UNIT 6.6.5: Procedures and Formalities for Bank Finance

Unit Objectives

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

1. Discuss the importance of setting goals
2. Differentiate between short-term, medium-term and long-term goals
3. Discuss how to write a business plan
4. Explain the financial planning process
5. Discuss ways to manage your risk

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.

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.

CHECKLIST OF DOCUMENTS TO BE SUBMITTED ALONG WITH LOAN APPLICATION (Common for all banks)

- | |
|---|
| 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.

UNIT 6.6.6: Enterprise Management – An Overview: How to Manage Your Enterprise?

Unit Objectives

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

1. 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.

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 make a matrix they need to fill.
- They have to write the main topics and key words that will 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.

UNIT 6.6.7: 20 Questions to Ask Yourself before Considering Entrepreneurship

Unit Objectives

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

1. 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.
- 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.



Skill India
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सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP



N · S · D · C
National
Skill Development
Corporation

Transforming the skill landscape



**Telecom
Sector
Skill
Council**

6. Annexures

Annexure 1 – Training Delivery Plan

Annexure 2 – Assessment Criteria



Annexure 1

Training Delivery Plan

Training Delivery Plan			
Program Name:	Optical Fibre Splicer		
Qualification Pack Name & Ref. ID	Optical Fibre Splicer (TEL/Q6400)		
Version No.	V1.0	Version Update Date	
Pre-requisites to Training	Class 8 th		
Training Outcomes	<p>By the end of this program, the participants will be able to:</p> <ul style="list-style-type: none"> • Design the layout before the fiber deployment on-ground • Perform installation and commission the fiber as per the industry norms • Perform route inspection during site visit – Checking of joints in fiber and performing patrolling time to time and checking if there is any cut in the outer and inner cable • Perform splicing process after the fiber deployment on ground • Identify various tools and equipment's used during the process and splicing methods for single mode and multi-mode fiber 		

Sr. No.	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/ Aids	Duration	
1.	Introduction	About Telecom and Optical Fibre	<ul style="list-style-type: none"> Explain the growth and opportunities in the broadband industry 	Bridge Module	Facilitator-led-discussion	Handbook, pen, duster, Projector/slides,	T: 3 hrs	
			<ul style="list-style-type: none"> Explain the attributes, job description and key responsible areas (KRA) of an 'optical fibre splicer' 				T: 4 hrs	
			<ul style="list-style-type: none"> Explain the functioning of public switched telephone network (PSTN) 				T: 4 hrs	
			<ul style="list-style-type: none"> Identify the various media of transmission 				T: 2 hrs P: 5 hrs	
			<ul style="list-style-type: none"> Describe important telecom terminologies 				T: 2 hrs P: 5 hrs	
T: 15 hrs, P: 10 hrs								
2.	Undertake Splicing of Optical Fibre	Tools and Equipment Handling	<ul style="list-style-type: none"> Describe the importance of maintaining a proper and complete tool kit 	TEL/N6400 PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14 PC22, PC23, PC24, PC25, PC26, PC27, PC28, PC29, PC30, PC31	Facilitator-led-discussion	Cleaver, Mechanical and fusion Splicing kit, Protection Sleeves, Fibre Stripper, Fibre reinforced plaster during Splicing and Jointing	T: 2 hrs P: 5 hrs	
			<ul style="list-style-type: none"> Identify the basic checks required for a tool-kit 				T: 3 hrs P: 5 hrs	
			<ul style="list-style-type: none"> List the fibre optic tools along with their usage 				T: 2 hrs P: 5 hrs	
		Optical Fibre Cable Testing	<ul style="list-style-type: none"> List the points to check for testing of long outside plant cable and optical fibre cable 				Optical test equipment like OTDR and power meter	T: 3 hrs P: 5 hrs
			<ul style="list-style-type: none"> Explain the testing of optical fibre with VFL (Visual Fault Locator) and inspection microscope 					T: 3 hrs P: 5 hrs
			<ul style="list-style-type: none"> Explain the connector end cleaning procedure 					T: 2 hrs P: 5 hrs
			<ul style="list-style-type: none"> Identify the tools used in bare fibre test 					T: 2 hrs P: 5 hrs
			<ul style="list-style-type: none"> List the steps of bare fibre test 					T: 2 hrs P: 5 hrs
			<ul style="list-style-type: none"> Describe the measurements, requirement, specifications and best practices of an (optical 					T: 3 hrs P: 5 hrs

Sr. No.	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/ Aids	Duration
			time-domain reflectometer) OTDR				
			<ul style="list-style-type: none"> Explain insertion loss test and optical return loss test 				T: 2 hrs P: 5 hrs
		Optical Fibre Splicing	<ul style="list-style-type: none"> Explain optical fibre splicing and its requirement 	PC15, PC16, PC17, PC18, PC19, PC20, PC21		Cleaver, Mechanical and fusion Splicing kit, Protection Sleeves, Fibre Stripper, Fibre reinforced plaster during Splicing and Jointing	T: 3 hrs P: 5 hrs
			<ul style="list-style-type: none"> Describe mechanical and fusion splicing 				T: 3 hrs P: 5 hrs
			<ul style="list-style-type: none"> List the steps to perform for mechanical and fusion splicing 				T: 2 hrs P: 5 hrs
			<ul style="list-style-type: none"> List the checks to prepare cable for splicing 				T: 2 hrs P: 5 hrs
			<ul style="list-style-type: none"> Identify the material and equipment used for splicing 	PC1, PC2, PC3, PC4, PC5, PC6			T: 2 hrs P: 5 hrs
			<ul style="list-style-type: none"> Differentiate between good and bad splices 				T: 2 hrs P: 5 hrs
			<ul style="list-style-type: none"> List the safety norms to be followed during splicing 				T: 2 hrs P: 5 hrs
T: 40 hrs, P: 85 hrs							
3.	Installation and Commissioning of Optical Fibre Cable	Site Visit and Route Inspection	<ul style="list-style-type: none"> Explain the importance of a site visit 	TEL/N6401 PC1, PC2, PC3.	Facilitator-led-discussion Skill Practice	Safety equipment (PPE)	T: 1.5 hrs P: 5 hrs
			<ul style="list-style-type: none"> List the benefits of a route inspection 				T: 1.5 hrs P: 6 hrs
			<ul style="list-style-type: none"> Describe the steps of route inspection 	PC4, PC5, PC6.			T: 2 hrs P: 6 hrs
			<ul style="list-style-type: none"> List the actions to be performed during a route walk 				T: 2 hrs P: 6 hrs
							T: 1.5 hrs P: 6 hrs
		Installation of Fibre Optic Cable	<ul style="list-style-type: none"> Describe the various fibre optic cable specifications 	PC7, PC8, PC9, PC10, P11, PC12, PC13, PC14, PC15, P16, PC17, PC18, PC19, PC20,		Cable blowing machines, Optical test equipment like OTDR and power meter,	T: 2 hrs P: 5 hrs
			<ul style="list-style-type: none"> Explain the factors affecting fibre optic cables 				T: 2 hrs P: 5 hrs
			<ul style="list-style-type: none"> Explain the proper handling of optical fibres during installation 				T: 2 hrs P: 6 hrs

Sr. No.	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/ Aids	Duration
			<ul style="list-style-type: none"> List the points to be considered while installing an Optical fibre cable 	PC21,PC22, PC23, KB6, KB7		Protection Sleeves, Fibre Stripper, Tools (Tubing cutter, rotary cable slitting and ringing tool, cable jacket stripper, fibre optic stripper, buffer tube stripper- to cut jacket/buffer tube in loose tube cable.	T: 2 hrs P: 6 hrs
			<ul style="list-style-type: none"> Describe the steps involved in an Optical fibre cable installation 	PC24, PC25, PC26, PC27, PC28, PC29			T: 2 hrs P: 6 hrs
			<ul style="list-style-type: none"> Identify the points to be tested after installation 	PC37, PC38, PC39			T: 1.5 hrs P: 6 hrs
			<ul style="list-style-type: none"> Identify the points to be tested after installation 				T: 2 hrs P: 6 hrs
			<ul style="list-style-type: none"> List the advantages of documentation and the importance of its proper storage 				T: 1.5 hrs P: 6 hrs
T: 25 hrs, P: 80 hrs							
4.	Optical Fibre Health and safety	Safety Policies and Guidelines	<ul style="list-style-type: none"> List the precautions that need to be taken while working with an optical fibre 	TEL/N6400, PC32, PC33, PC34, PC35, PC36, PC37, PC38, PC40, KA7, KA8	Facilitator-led-discussion Videos Skill Practice	First Aid Kit and Safety equipment's, Fire extinguisher	T: 2 hrs P: 1.5 hrs
			<ul style="list-style-type: none"> List the optical fibre fire precautions 				T: 2 hrs P: 1.5 hrs
			<ul style="list-style-type: none"> Identify the safety and warning signs 				T: 2 hrs P: 1.5 hrs
			<ul style="list-style-type: none"> List the safety policies and guidelines 				T: 2 hrs P: 1.5 hrs
		Personal Safety	<ul style="list-style-type: none"> Identify the personal protective equipment (PPE) 	PC39, PC41, K10			T: 2 hrs P: 1.5 hrs
			<ul style="list-style-type: none"> Describe the workmanship safety guidelines 				T: 2 hrs P: 1.5 hrs
			<ul style="list-style-type: none"> List the important safety guidelines for an optical fibre splicer 				T: 2 hrs P: 1.5 hrs
		First Aid and Fire Emergency	<ul style="list-style-type: none"> List the first aid techniques 				T: 2 hrs P: 1.5 hrs
			<ul style="list-style-type: none"> Identify the fire hazards and types of fires 				T: 2 hrs P: 1.5 hrs
			<ul style="list-style-type: none"> Describe the emergency procedure and evacuation plan 				T: 2 hrs P: 1.5 hrs
T: 20 hrs , P: 15 hrs							

Sr. No.	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/ Aids	Duration
5.	Soft Skills	Grooming	<ul style="list-style-type: none"> Describe and demonstrate grooming techniques 	TAL/N6401	Facilitator-led-discussion Videos Skill Practice	Book, pen, duster, Projector/slides, Video	T: 0.5 hrs P: 0 hrs
			<ul style="list-style-type: none"> List the importance of grooming and personal hygiene 				T: 0.5 hrs P: 0 hrs
		Communication Skills and Team Work	<ul style="list-style-type: none"> Explain and outline the need for effective communication as an Optical Fibre Cable (OFC) technician 	SA4, SA5, SA6			T: 0.5 hrs P: 0 hrs
			<ul style="list-style-type: none"> Describe and demonstrate effective process of communication at your work place 	SA11, SA12, SA13			T: 0.5 hrs P: 0 hrs
			<ul style="list-style-type: none"> Display different types of communication 				T: 0.5 hrs P: 0 hrs
			<ul style="list-style-type: none"> Demonstrate effective listening skills in your day-to-day life 				T: 0.5 hrs P: 0 hrs
			<ul style="list-style-type: none"> Identify team work and its importance 				T: 0.5 hrs P: 0 hrs
			Group Activity	Create two groups and ask them to discuss on two situations: <ul style="list-style-type: none"> Transfer information about the work from one colleague to other Encourage a colleague to perform better in work 			PC40, PC41, PC42, PC43, PC44
		Documentation and Reporting	<ul style="list-style-type: none"> Explain the documentation process 	T: 0.5 hrs P: 0 hrs			
			<ul style="list-style-type: none"> Identify the steps in documentation 	T: 0.5 hrs P: 0 hrs			
			<ul style="list-style-type: none"> Explain the reporting procedure 	T: 0.5 hrs P: 0 hrs			
		Time management and Problem Solving	<ul style="list-style-type: none"> Explain and outline time management and its benefit 				T: 0.5 hrs P: 0 hrs
			<ul style="list-style-type: none"> Explain and outline various time wasters as stumbling blocks 				T: 0.5 hrs P: 0 hrs
			<ul style="list-style-type: none"> Demonstrate effective time management skills by using building blocks 				T: 0.5 hrs P: 0 hrs
			<ul style="list-style-type: none"> Understand and demonstrate effective problem-solving skills 				T: 0.5 hrs P: 0 hrs
			<ul style="list-style-type: none"> Explain and outline benefits of problem solving 				T: 0.5 hrs P: 0 hrs

Sr. No.	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/ Aids	Duration
		Group Activity	Create a group and ask them to discuss on two situations: <ul style="list-style-type: none"> • Provide situation by giving a problem and ask them to discuss on how to solve the problem effectively 				T: 1 hrs P: 0 hrs
T: 10 hrs, P: 00 hrs							

Annexure 2

Assessment Criteria

CRITERIA FOR ASSESSMENT OF TRAINEES

Assessment Criteria for “Optical Fibre Splicer”	
Job Role	Optical Fibre Splicer
Qualification Pack	TEL/Q6400
Sector Skill Council	Telecom Sector Skill Council
<p>Guidelines for Assessment</p> <ol style="list-style-type: none"> 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 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 and skill practical 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 criteria. 6. To pass the Qualification Pack, every trainee should score a minimum of 40% in every NOS and Overall 50% pass percentage. 7. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack. 	

Assessment Strategy Total Marks: 300		Marks Allocation		
NOS	Performance criteria	Total	Theory	Practical
TEL/N6400 (Undertake Splicing of Optical Fiber)	PC1. verify that cable is installed as per the installation plan and visually inspect cable for signs of sheath damage	2	2	0
	PC2. ensure minimum bend ratios are maintained according to manufacturer's specifications to prevent cable damage and signal degradation	5	2	3
	PC3. ensure cable is placed on stable jointing pit	3	2	1
	PC4. secure cable according to safe industry practice to avoid cable and sheath damage	3	0	3
	PC5. identify the appropriate fibers to be joined based on color coding, and sequence	6	2	4
	PC6. identify appropriate place for the joint chamber location	4	2	2
	PC7. clean the fiber appropriately as per company/manufacturer's	2	2	0
	PC8. ensure availability of test equipments like Optical Time Domain Reflectometer and Power meter for carrying out optical tests	1	1	0
	PC9. ensure availability of optical equipments like spool, joint closure, connectors, splicer and cleaver	1	1	0
	PC10. ensure that faulty equipments are sent to logistics team for repair and replacement	2	1	1
	PC11. ensure availability of joint kits, Pigtails, patch cords, FDF, OdB connector, protection sleeves, heat shrinks	1	1	0
	PC12. ensure continuous power supply at site for the splicing operation by use of portable generators or standby heavy duty batteries	1	1	0
	PC13. ensure availability of RCC joint chambers with covers as per specifications	1	1	0
	PC14. ensure availability of sand for filling the chambers	1	1	0
	PC15. ensure availability of one spare cable drum for emergency replacement of laid cables	1	1	0
	PC16. ensure calibration status of equipments to be used (eg.splicing machine, Optical Time Domain Reflectometer , power meter, cleaver)	1	0	1
	PC17. ensure clean environment for splicing operations	2	2	0

Assessment Strategy Total Marks: 300		Marks Allocation		
NOS	Performance criteria	Total	Theory	Practical
	PC18. ensure cables are stripped off their protective coating, at areas where splicing has to be performed as per the standard process	2	2	0
	PC19. ensure the fiber ends are cleaved with a precision cleaver and are inspected with magnifier to ensure appropriateness	6	2	4
	PC20. in case of fusion splicing - Insert fibers strand to the fusion machine in accordance to product/equipment specifications	6	2	4
	PC21. in case of mechanical splice, align the fibers together by a precision made sleeve and place the prepared fiber in mechanical splicing kit	6	2	4
	PC22. verify the spliced fiber for appropriate splicing in the magnifier window	1	1	0
	PC23. ensure appropriate splice protectors like heat shrink splice protectors are utilized to protect the splice	2	2	0
	PC24. test the fiber joint with Optical Time Domain Reflectometer to confirm conformance to design requirements	2	2	0
	PC25. ensure optical losses - reflectance, return and insertion are within the defined specifications/ limits	4	3	1
	PC26. ensure sealing of Joint closure through heat shrinking/ multi diameter seals/ mechanical seals as appropriate	3	2	1
	PC27. ensure FRP - Fiber reinforced plastic is used to strengthen the joint as required	3	2	1
	PC28. test the fiber at both ends for instances of cross fiber using power source and power meter tests and ensure their elimination	4	2	2
	PC29. ensure joint is placed in the chamber properly	1	0	1
	PC30. ensure spare cable (loop) is coiled appropriately and placed inside the joint	3	1	2
	PC31. ensure that sand is filled in the chamber to the brim and the chamber covers are placed properly	3	2	1
	PC32. ensure that Joint indicator is planted 1 meter behind the chamber location (away from road)	1	1	0

Assessment Strategy Total Marks: 300		Marks Allocation		
NOS	Performance criteria	Total	Theory	Practical
	PC33. ensure that the indicator is painted proper colour (for example yellow for joint)	1	1	0
	PC34. ensure appropriate disposal of the cut fibers, sleeves and cable pieces	1	0	1
	PC35. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms	1	1	0
	PC36. ensure that work is carried out in accordance to the level of competence and legal requirements	1	1	0
	PC37. ensure that sites are assessed for health and safety risk as per company's guidelines prior to commencement of work	2	1	1
	PC38. ensure compliance to health and safety guidelines by optical splicer and installation labor workers	1	1	0
	PC39. ensure that Personal protection equipments like helmets, knee pads, safety boots, safety glasses and trench guards are appropriately used as required	1	0	1
	PC40. ensure environmental conditions and hazards like Earth Potential Rise (EPR) are considered while carrying out the work	2	0	2
	PC41. ensure escalation of safety incidents to relevant authorities as per guidelines	1	1	0
	PC42. ensure appropriate cable marking and Installation of chamber & route marker for direction and route identification	1	1	0
	P43. ensure preparation of jointing record for future reference	1	1	0
	PC44. ensure that documents that are required to be updated are identified	1	1	0
	PC45. ensure completion of Optical Time Domain Reflectometer register showing complete record of jointing tests	1	1	0
	PC46. ensure that documents are available to all appropriate authorities to inspect	1	1	0
Total		100	59	41

Assessment Strategy Total Marks: 300		Marks Allocation		
NOS	Performance criteria	Total	Theory	Practical
TEL/N6401 (Installation & Commissioning of Optical fiber cables (OFC)- Optional NOS)	PC1. obtain optical fibre cable route plan from the planning team or the supervisors as per which optical fibre cable has to be laid	3	3	0
	PC2. verify the proposed route to ensure that bend ratios meet manufacturer's specifications and industry standards	4	2	2
	PC3. ensure that site is made safe and secure for cable installation in coordination with labour workers	3	3	0
	PC4. ensure availability of test equipments like Optical Time Domain Reflectometer and Power meter for carrying out optical tests	2	2	0
	PC5. ensure availability of all required trenching, cable laying, pipe laying, Optical fibre cable laying and splicing equipments and spares for timely completion of installation activity	2	2	0
	PC6. ensure that faulty equipments are sent to logistics team for repair and replacement	1	1	0
	PC7. ensure cable drum is placed near site location and test cable on drum for optical continuity	2	2	0
	PC8. ensure trenching is carried out by labour workers as per the detailed route plan requirements and site terrain	3	0	3
	PC9. ensure use of specially designed dispensers to place the ducts in the trench as straight as possible	2	2	0
	PC10. ensure pipe/ ducts are placed at lower appropriate depths as per the laying standards after approval from competent personnel	5	2	3
	PC11. ensure that ducts are free from twists, collapsed portions and that all such portions are rectified by using appropriate couplers	4	2	3
	PC12. ensure proper uncoiling of PLB ducts	3	1	2
	PC13. ensure duct joints are airtight to ensure smooth cable blowing using cable blowing machines	5	2	3
	PC14. ensure cable blowing/ jetting is carried out using rodder as per standard process	3	0	3
	PC15. ensure availability of additional cable length (loop) at jointing locations, for future use in case of failures	5	2	3

Assessment Strategy Total Marks: 300		Marks Allocation		
NOS	Performance criteria	Total	Theory	Practical
	PC16. ensure that ends of ducts are closed with End Plugs to avoid ingress of mud, water or dust	4	1	3
	PC17. ensure that entire length of the duct is cleaned to remove sand, dust that may damage the optical fiber cable	2	0	2
	PC18. ensure that cables are appropriately prepared for Jointing based on colour and/ or sequence matching	4	2	2
	PC19. ensure the cables are joined/ spliced as per the standard fusion/ mechanical splicing mechanisms	2	0	2
	PC20. ensure use of proper protection material such as GI pipes, RCC pipes, RCC half-cut pipes etc.	3	1	2
	PC21. ensure use of Pushfit couplers as duct joints	1	1	0
	PC22. ensure installation activity is completed within the defined SLAs	1	1	0
	PC23. ensure timely completion of work by monitoring activities performed by the labour workers	1	1	0
	PC24. ensure use of appropriate color for the route indicators and joint indicators as per standards	3	1	2
	PC25. ensure splices are within the quality assurance/ AT standards	2	2	0
	PC26. ensure backfilling and crowning in coordination with the labour workers as per standard requirements	3	1	2
	PC27. ensure stone marker at the jointing pit has to be provided for identification of route as well as jointing pit	2	0	2
	PC28. ensure appropriate cable markings as per guidelines	2	0	2
	PC29. clear sites from debris and other items	3	1	2
	PC30. ensure appropriate disposal of the cut fibers, sleeves and cable pieces	3	2	1
	PC31. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms	2	2	0

Assessment Strategy Total Marks: 300		Marks Allocation		
NOS	Performance criteria	Total	Theory	Practical
	PC32. ensure that work is carried out in accordance to the level of competence and legal requirements	2	2	0
	PC33. ensure that sites are assessed for health and safety risk as per company's guidelines prior to commencement of work	2	2	0
	PC34. ensure that Personal protection equipments like helmets, knee pads, safety boots, safety glasses and trench guards are appropriately used as required	2	2	0
	PC35. ensure adherence to emergency plans in case of safety incidents	2	0	2
	PC36. ensure escalation of safety incidents to relevant authorities as per guidelines legal requirements	2	0	2
	PC37. ensure cable id/ make and drum numbers are recorded for future fault localization	2	2	0
	PC38. obtain sign-off from the projects team and communicate status to NOC for cable integration	2	2	0
	PC39. ensure that documents are available to all appropriate authorities to inspect	1	1	0
Total		100	53	47



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