



**Skill India**  
कौशल भारत - कुशल भारत



सत्यमेव जयते  
GOVERNMENT OF INDIA  
MINISTRY OF SKILL DEVELOPMENT  
& ENTREPRENEURSHIP



N S · D · C  
National  
Skill Development  
Corporation

Transforming the skill landscape



Skilling India in Electronics

# Facilitator Guide



Sector  
Electronics

Sub-Sector  
Consumer Electronics

Occupation  
After Sales Service

Reference ID: ELE/Q3104, Version 1.0

NSFQ Level: 4

**Field  
Technician:  
Other Home  
Appliances**





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

The need for having a standard curriculum for the Job Role based Qualification Packs under the National Skills Qualification Framework was felt necessary for achieving a uniform skill based training manual in the form of a Facilitator Guide.

I would like to take the opportunity to thank everyone who contributed in developing this Guide for the QP Field Technician – Other Home Appliances.

The Guide is the result of tireless pursuit to develop an effective tool for imparting the Skill Based training in the most effective manner.

I would like to thank the team of KontentEdge for their support to develop the content, the SME and the team at the ESSCI along with the industry partners for the tireless effort in bringing the Guide in the current format.

CEO

Electronics Sector Skills Council of India

## About this Guide

This Facilitator Guide is designed to enable training for the “Field Technician-Other Home Appliances” Qualification Pack (QP). Each National Occupational (NOS) is covered across Unit/s.

Key Learning Objectives for the “Field Technician-Other Home Appliances” NOS mark the beginning of the Unit/s for that NOS. The symbols used in this book are described below.

## Symbols Used



Steps



Time



Tips



Notes



Objectives



Do



Ask



Explain



Elaborate



Field Visit



Practical



Lab



Demonstrate



Exercise



Team Activity



Facilitation Notes



Learning Outcomes



Say



Resources



Activity



Summary



Role Play



Example

## Table of Contents

S. No	Modules and Units	Page No.
1.	<b>Basics of Electricity and Electronics (ELE/N3120, ELE/N3121, ELE/N3119)</b>	<b>1</b>
	Unit 1.1 - Basics of Electric Circuits	3
	Unit 1.2 - Components of an Electric Circuit	7
2.	<b>Role of a Field Technician of Other Home Appliances (ELE/N3118, ELE/N3120, ELE/N3121)</b>	<b>13</b>
	Unit 2.1 - Introduction to FT-OHA	15
	Unit 2.2 - Work Standards and Safety	17
	Unit 2.3 - Equipment and Appliances Used	19
3.	<b>Basics of Water-Based Appliances (ELE/N3118, ELE/N3119)</b>	<b>21</b>
	Unit 3.1 - Properties of Water Affecting Water-Based Appliances	23
	Unit 3.2 - Water Treatment Methods	25
4.	<b>Installing Water Purifiers (ELE/N3118, ELE/N3119)</b>	<b>27</b>
	Unit 4.1 - Water Purifiers	29
	Unit 4.2 - RO Water Purifiers	33
	Unit 4.3 - Installing a RO Water Purifier	35
5.	<b>Repairing RO Water Purifiers (ELE/N3101, ELE/N3119, ELE/N3118)</b>	<b>41</b>
	Unit 5.1 - Understanding Customer Complaints	43
	Unit 5.2 - Maintenance and Troubleshooting of RO Water Purifiers	45
	Unit 5.3 - Safety Rules	51
6.	<b>Repairing Mixer/Grinder/Juicer (ELE/N3120, ELE/N3101)</b>	<b>53</b>
	Unit 6.1 - Mixer/Grinder/Juicer	55
	Unit 6.2 - Repairing Mixer/Grinder/Juicer	60
	Unit 6.3 - Safety Rules	65
7.	<b>Repairing Microwave Oven (ELE/N3101, ELE/N3121)</b>	<b>67</b>
	Unit 7.1 - Microwave Oven	69
	Unit 7.2 - Repairing Microwave Oven	73
	Unit 7.3 - Safety Rules	79
8.	<b>Interacting with Co-workers (ELE/N9909, ELE/N3101)</b>	<b>83</b>
	Unit 8.1 - Interacting with the Supervisor	85
	Unit 8.2 - Interacting with Colleagues	88
	Unit 8.3 - Interacting with Customers	91

S. No	Modules and Units	Page No.
9.	<b>Employability &amp; Entrepreneurship Skills</b>	93
	Unit 9.1 - Personal Strengths & Value Systems	98
	Unit 9.2 - Digital Literacy: A Recap	132
	Unit 9.3 - Money Matters	141
	Unit 9.4 - Preparing for Employment & Self-Employment	159
	Unit 9.5 - Understanding Entrepreneurship	177
	Unit 9.6 - Preparing to be an Entrepreneur	206
10.	<b>Annexures</b>	227
	Annexure 1 - Training Delivery Plan	228
	Annexure 2 - Assessment Criteria	232





**Skill India**  
कौशल भारत - कुशल भारत



Skilling India in Electronics

# 1. Basics of Electricity and Electronics

Unit 1.1 - Basics of Electric Circuits

Unit 1.2 - Components of an Electric Circuit



ELE/N3120, ELE/N3121  
ELE/N3119

## Key Learning Outcomes

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

- Explain electric circuits
- Describe voltage, current and resistance
- Calculate power and energy
- Identify electronic components

## UNIT 1.1: Basics of Electric Circuits

### Unit Objectives

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

- Describe electric circuits
- Describe voltage, current and resistance
- Define Ohm's law
- Explain the difference between alternating current (AC) and direct current (DC)
- Measure power and energy
- Demonstrate the use of multimeter

### Do

- Make a circuit using supply source, conductor, load and switch.

### Ask

- Ask if anyone knows about electrical/electronic circuit.

### Explain

- Explain about electrical/electronic circuit.

### Notes for Facilitation

- Tell the participants that a circuit is a closed path/loop which begins and ends at the same point.
- Explain the basic components of a circuit:
  - Load: A device in a circuit that consumes electric power.
  - Supply Source: Provides electrical pressure called as voltage or EMF to electrical equipment for them to work.
  - Conductor: The connectors or wires used to connect the supply source and the load.
- Tell the participants that an insulator is a material through which electricity cannot flow freely/cannot flow.
- Tell that insulators have higher resistivity than conductors.
- Tell that a perfect insulator does not exist.
- Tell that active elements require a source of power to operate.
- Inform them that active elements include transistors (all types), integrated circuits (all types), Triode for AC (TRIACs), SCRs and LEDs.

- Tell that passive components are capable of operating without an external power source.
- Typical passive components are resistors, capacitors, inductors and diodes.
- Explain to the participants that electron is a negatively charged particle. The flow of electrons in a circuit is called current. The unit of current is ampere and is denoted by the letter I.
- Tell that the difference of charge between any two points in a circuit is called voltage. The unit of voltage is volts and is denoted by the letter V.
- Explain the two types of current sources, AC (Alternating Current) and DC (Direct Current).
- Explain about AC:
  - In AC, electrons keep switching directions.
  - It is the current of magnitude varying with time.
  - Types of AC are Sinusoidal, Trapezoidal, Triangular, Square.
- Explain DC:
  - In DC, the electrons flow steadily in a single direction.
  - It is the current of constant magnitude.
  - Types of DC are pure and pulsating.
- Tell the difference between AC and DC with the help of the following table:

Parameter	Alternating Current	Direct Current
Amount of energy that can be carried	Safe to transfer over long city distances and can provide more power	Voltage of DC cannot travel very far as it begins to lose energy
Cause of the direction of flow of electrons	Rotating magnetism along the wire	Steady magnetism along the wire
Frequency	The frequency of alternating current is 50Hz or 60Hz depending upon the country	The frequency of direct current is zero
Direction	It reverses its direction while flowing in a circuit	It flows in one direction in the circuit
Current	It is the current of magnitude varying with time	It is the current of constant magnitude
Flow of electrons	Electrons keep switching directions-forward and backward	Electrons move steadily in one direction or 'forward'
Obtained from	A.C Generator and mains	Cell or Battery
Passive Parameters	Impedance	Resistance only
Types	Sinusoidal, Trapezoidal, Triangular, Square	Pure and pulsating

Fig 1.1.1: Difference between AC and DC

- Tell about unit: A quantity used as a standard of measurement.
- Tell that units help to show another person the exact amount one has.
- Assist in solving a mathematical problem, especially in chemistry.
- Explain about the conversion of units as shown in the following figure:

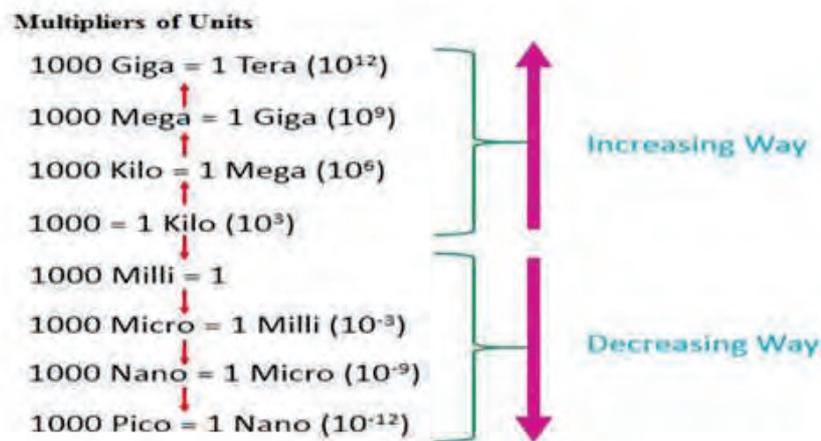


Fig 1.1.2: Conversion of units

- Tell the participants that the ability to oppose flow of electric charge in a conductor is called resistance.
- Explain that the element which has the property of resistance is called a resistor.
- Tell that resistance is measured in Ohms ( $\Omega$ )
- Inform them that the symbol of resistance is



Fig 1.1.3: Resistance symbol

- Explain the fundamental relationship between voltage ( $V$ ), current ( $I$ ) and resistance ( $R$ ) is called Ohm's Law
- $V/I = \text{Constant}$  or  $V/I = \text{Resistance}$
- $V = I \times R$
- Explain to the participants that power is the amount of energy consumed per unit time and it is measured in watts

$$\text{Electric Power} = \text{Voltage} \times \text{Current}$$

- Tell that electricity consumption is measured in kilowatt hour (kWh).

- Tell that power is calculated by using the formulae as shown in the following image:

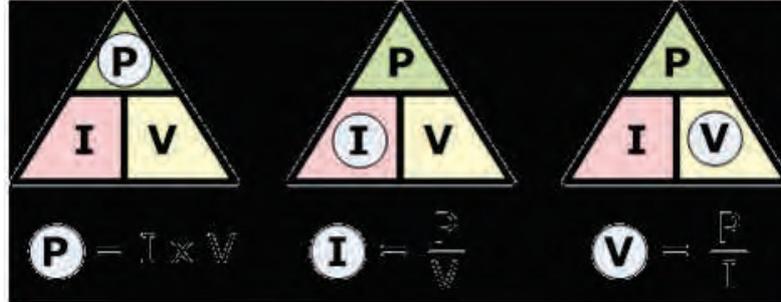


Fig 1.1.4: Formulae for calculating power

- Tell the participants that an inductor is also called a coil. It is a two-terminal electrical component which resists changes in electric current passing through it.
- Explain that an inductor is characterized by its inductance. Electrical inductance is measured in henry.
- Tell that a capacitor is the element that stores electricity when it is charged.
- Tell that a capacitor is essentially two conductive plates, separated by an insulator (the dielectric).
- Its unit is farad.
- Tell the participants that a multimeter is an instrument used to check multiple values.
- Tell that a multimeter can be used to check current, voltage and resistance in electronics equipment and to check continuity between two points.
- Tell that a testing instrument with integral AC current clamp is used to measure current flowing through a conductor.
- Activity, Answer the Questions:
  - Hints
    - Clamp meter
    - $I = V/R$

## UNIT 1.2: Components of an Electric Circuit

### Unit Objectives

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

- Identify the active components
- Describe the passive components
- List electromagnetic components

### Ask

- Ask if anyone knows about transformer, photo transistor, thermistor and IC.

### Explain

- Explain about transformer, photo transistor, thermistor and IC.

### Notes for Facilitation

- Explain to the participants that a transformer transforms one AC voltage level to other AC voltage level.
- Inform them that step-up and step-down are the two types of transformers.
- Tell that like diodes, all transistors are light-sensitive. Phototransistors are designed specifically to take advantage of this fact.
- Explain that the most-common variant is an NPN bipolar transistor with an exposed base region.
- Tell that light striking the base replaces what would ordinarily be voltage applied to the base. A phototransistor amplifies variations in the light striking at it.
- Explain that a thermistor is a thermal resistor - a resistor that changes its resistance with temperature. Technically, all resistors are thermistors.
- Tell that the resistance in the thermistors changes drastically with temperature so that it can be 100 ohms or more of change per degree.
- Explain to them that an integrated circuit (IC), sometimes called a chip or a microchip, is a semiconductor wafer on which thousands or millions of tiny resistors, capacitors, and transistors are fabricated.
- Explain the passive components of an electrical circuit.
- Explain a resistor by telling them that it is a component in an electronic circuit which is built to resist or limit the flow of current in that circuit.

- Show the following images of resistors:

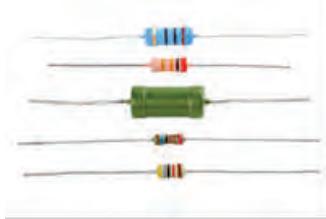


Fig 1.2.1: Resistors

- Explain a capacitor by defining it as a device which is made up of one or more pairs of conductors and an insulator separating them. Show them the following images of capacitors.



Fig 1.2.2: Capacitors

- Explain an inductor by telling that it consists of a coil or a wire loop and is used to store energy in the form of a magnetic field.
- Show them the following images of inductors:



Fig 1.2.3: Inductors

- Explain a thermistor by defining it as a kind of resistor which is more sensitive to temperature as compared to other resistors. Show them the following image of a thermistor:



Fig 1.2.4: Thermistor

- Explain that a motor is an electrical component which is used to transform electrical energy into mechanical energy to produce linear or rotary force. Show them the following image:

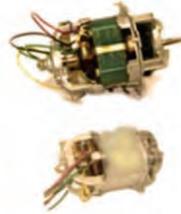


Fig 1.2.5: Motor

- Explain that a PCB acts as a base for the components that are mounted on its surface and interconnected with wires, conductive tracks and so on. Show them the following image:



Fig 1.2.6: Printed circuit board

- Explain that a connector is a device which is used to join two circuits together. Show them the following image:



Fig 1.2.7: Connector

- Explain that a switch is a component used to make or break connections in an electrical circuit. It is used to divert the current from one conductor to another one. Show them the following image:



Fig 1.2.8: Switch

- Explain that a relay is a switch that controls an electrical circuit by opening and closing contacts in another circuit, electromechanically or electronically. Show them the following image:



Fig 1.2.9: Relay

- Explain that a circuit breaker is a requisite component of an electrical power system required for its control and protection. Show them the following image:



Fig 1.2.10: Circuit breaker

- Explain that a starter is a device that is used to start, stop, reverse and protect a motor. It controls the supply of electric power to the motor. Show them the following image:



Fig 1.2.11: Starter

- Explain that a timer, also known as a time switch, is a special type of clock that measures time intervals. It operates a switch that is controlled using a timing device. Show them the following image:



Fig 1.2.12: Timer

- Tell that an IC can function as an amplifier, oscillator, timer, counter, computer memory or microprocessor.
- Explain that linear ICs have continuously variable output that depends on the input signal level.
- Explain that linear ICs are used as audio-frequency (AF) and radio-frequency (RF) amplifiers.
- Tell that digital ICs operate at only a few defined levels or states, rather than over a continuous range of signal amplitudes.
- Tell them that the fundamental building blocks of digital ICs are logic gates, which work with binary data, that is, signals that have only two different states, called low (logic 0) and high (logic 1).
- Activity, Identification Game:
  - Hints

1. Solid state relay	
2. Timer	
3. Inductor	
4. Starter	
5. Motor	

6. PCB



7. Plug





**Skill India**  
कौशल भारत - कुशल भारत



Skilling India in Electronics

## 2. Role of a Field Technician of Other Home Appliances

Unit 2.1 - Introduction to FT-OHA

Unit 2.2 - Work Standards and Safety

Unit 2.3 - Equipment and Appliances Used



ELE/N3118, ELE/N3120  
ELE/N3121

## Key Learning Outcomes

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

- Define a field technician and his/her key responsibilities
- Maintain working standards
- List safety rules
- Explain types of equipment used
- Categorize home appliances

## UNIT 2.1: Introduction to FT-OHA

### Unit Objectives

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

- Describe the role of an FT-OHA
- Identify the responsibilities of an FT-OHA

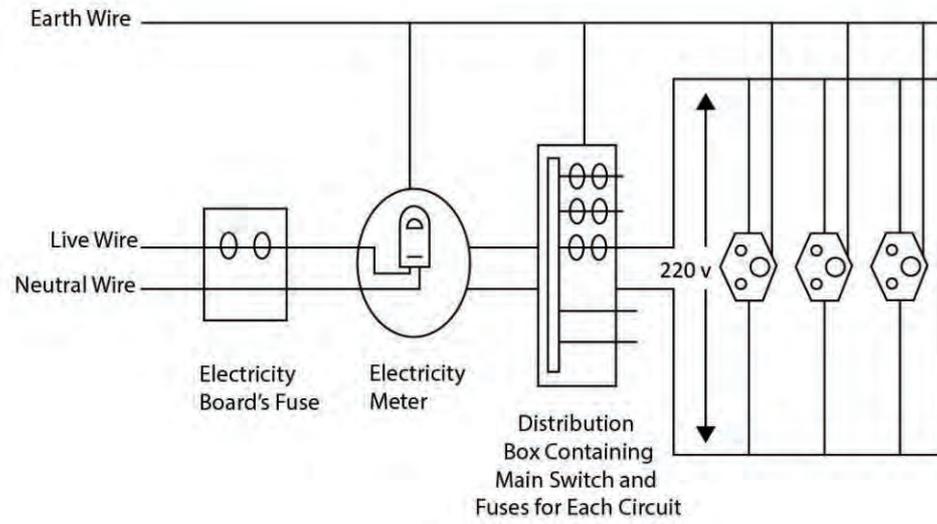
### Ask

- Ask the participants if anyone has an idea about their job role as a field technician of other home appliances.

### Notes for Facilitation

- Explain that technicians who have specialized technical knowledge for installing, repairing and maintaining the industry equipment, on or off a customer's site, are called field technicians. Their work is dependent on the type of equipment they are skilled in. For instance, if a person is skilled in installing, servicing or repairing home appliances, then he/she may be known as a field technician for home appliances.
- Tell that other home appliances' field technician has an after-sales service job of installing and providing support related to typical small home appliances such as water purifier, mixer/juicer/grinder and microwave oven. Technicians generally conduct site visits to install or repair these appliances.
- Explain to the participants that the individual at work is responsible for rectifying faults in the appliances at customers' premises.
- Tell that the individual receives the faulty appliance, diagnoses the problems, performs repair as required, resolves issues, ensures effective functioning of all the parts and checks the cleanliness of water before confirming to the customer.
- Inform that the job requires the individual to have: attention to details, patience, ability to listen, steady hands, basic plumbing skills and customer orientation.
- Tell that the individual must use a clean levelled platform to work with different types of equipment used for checking and repairs.

- Activity, Identification Game:
  - Solution:



## UNIT 2.2: Work Standards and Safety

### Unit Objectives

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

- Maintain working standards
- Identify safety rules

### Ask

- Ask the participants if they can tell the safety precautions to be taken against a fire.

### Explain

- Explain the safety measures to be taken during the construction of a building.
- Explain how to operate a fire extinguisher with the help of the following diagram:

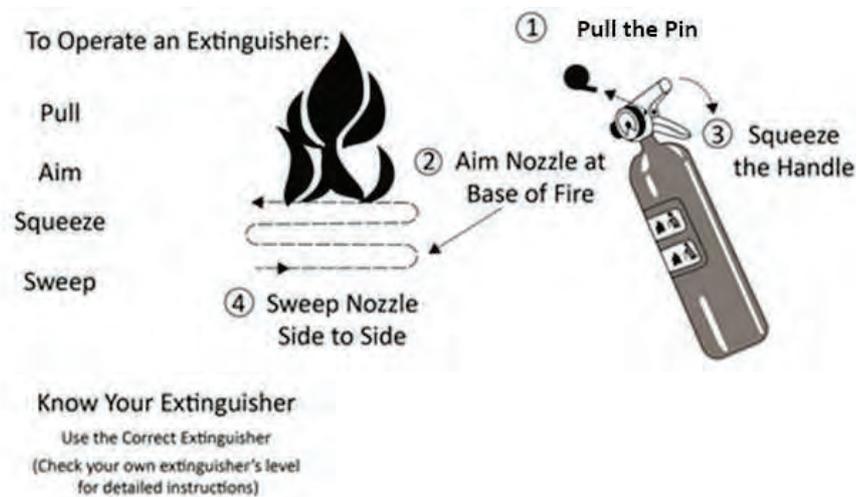


Fig 2.21: Fire extinguisher operation

- Explain the first aid in case of an electric shock:
  - Turn off the source of electricity.
  - If not, move the source away using a dry, non-conducting object.
  - Try to prevent the injured person from becoming chilled.
  - Apply a bandage. Cover any burned area with a sterile gauze bandage.
- Explain the first aid in case of cuts:
  - Apply direct pressure until bleeding stops.
  - Remove rings and bracelets that may prevent blood flow or compress nerves if swelling occurs later.
  - Clean the area with warm water and soap.

- Apply an antibiotic ointment and a sterile bandage.
- Apply ice and elevate the injured part to reduce swelling.
- If a finger or part of a finger has been cut off, collect all parts and tissue and place in a plastic bag on ice for transport to the hospital with the person.
- Explain the first aid when some object falls in an eye:
  - Wash hands before touching the eyes.
  - Look in a mirror and try to find the object in the eye.
  - Try to blink to allow tears to wash it out. Do not rub the eye.
  - If the particle is behind the upper eyelid, pull the upper lid out and over the lower lid and roll the eye upward. This can help get the particle to come off the upper lid and flush out of the eye.
  - If the object is in the corner of the eye or under the lower eyelid, remove it with a wet cotton swab or the corner of a clean cloth, while holding the lower lid open.
  - Fill an eyecup or a small juice glass with lukewarm water. Put the eye over the cup of water and open the eye to rinse it and flush the object out.
- Explain the first aid when chemical falls in an eye:
  - Immediately wash the eye with water by putting the head under the faucet or by pouring water into the eye from a clean container.
  - Keep the eye open while washing with water. Continue washing out the eye for 15 to 30 minutes.
  - After washing the eye out, call the health care provider or go with someone to the emergency department or urgent care center.
  - If possible, take the container of the chemical to the health care provider.
- Activity, Match the Following:
  - Hints:
    1. ii
    2. iii
    3. i
- Activity, Role play:
  - Hints:
    - Wash hands before touching the eyes.
    - Blink to allow the tears to wash it out.
    - Use a clean cloth or cotton swab to remove it.
    - Rinse the eyes using lukewarm water.

## UNIT 2.3: Equipment and Appliances Used

### Unit Objectives

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

- List the equipment used by a technician
- Recognize the categories in which appliances are divided

### Ask

- Ask if anyone knows about the different types of tools and their usage.

### Explain

- Explain how to use a rotary tubing or a pipe cutter.
- Explain how to use a tubing bender.
- Explain how to use a power drill.

### Notes for Facilitation

- Tell the participants that most if not all rotary tubing and pipe cutters share a similar design.
- Tell that depending on the manufacturer and tools' designs, most cutters will either have a stationary roller wheel (or wheels) and a movable cutting wheel or vice versa.
- Tell them to open the tool by loosening the screw and retracting the cutting wheel or roller(s).
- Tell them to slide the tubing or pipe into the tool and turn the adjustment screw to bring the roller wheel(s) and cutting wheel into contact with it.
- Tell them to rotate the tool around the clamped or otherwise secured tubing or pipe to start the cut.
- Tell that after at least one complete rotational pass, tighten the adjustment screw to engage the cutting wheel deeper into the tubing or pipe.
- Explain that larger tools are usually better as they offer greater leverage and easier cutting and they also match the tool size to the material being cut.
- Tell that cutting fluid can be used as lubrication. Damaged cutter wheel blades should be replaced promptly.
- Explain that a tubing bender is a simple tool to provide accurate and consistent bends on a variety of tubes.

- Explain how to Use a tubing bender:
  - Choose an Appropriate Tubing Bender
  - Set up the Tubing Bender
  - Mark Bend Directions and Reference Points
  - Align and Insert the Tube into the Bender
  - Start the Bending Process
  - Disengage the Tube from the Bender
- Tell that the power drill is a screwdriver. “Bits” can be attached to it, to match whatever screw one is being worked on and “drill bits” can also be attached, allowing one to drill holes in things.
- Tell that a power drill is needed for:
  - Tedious screwing jobs, such as during construction or assembly
  - Drilling holes into a wall or another surface
  - Dentistry but then, it is a special kind of drill
- Explain how to use a power drill:
  - Loosen
  - Put the bit into the chuck
  - Tighten
- Tell that there is a button, near the trigger, that tells the drill direction.
- Tell that there is also a torque setting.
- Tell that there are different types of drill bits for different types of material.
- Tell that being more powerful, power drills can quickly do more damage to the screws on the wall.
- Activity: Identification Game:
  - Hints
    1. Tubing cutter
    2. Microwave oven
    3. Tube bender
    4. Type of power drill
- Activity, Role play:
  - Hints
    - Select three candidates from the audience and assign them their roles.
    - Make one of them a colleague, one supervisor and one the field technician who will brief the colleague.
    - Tell the supervisor to give instructions to the field technician who will brief the colleague about the working of a tubing blender and its safety measures.
    - Tell the field technician to guide the colleague by first telling about the equipment/tool, then start with its basic working and then brief about the safety measures that should be taken while working with it.



**Skill India**  
कौशल भारत - कुशल भारत



Skilling India in Electronics

## 3. Basics of Water–Based Appliances

Unit 3.1 - Proper uses of Water A e c ng Water -Based Appliances

Unit 3.2 - Water Treatment Methods



ELE/N3118  
ELE/N3119

## Key Learning Outcomes

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

- List the proper uses of water affecting water-based appliances
- Describe water treatment methods
- List different types of filters

## UNIT 3.1: Proper Uses of Water Affecting Water-Based Appliances

### Unit Objectives

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

- Identify the importance of water and its requirements
- List the proper uses of water affecting water-based appliances

### Ask

- Ask the participants if anyone knows about water and its properties.
- Ask them if they can tell the percentage of Earth's surface that is covered with water and the percentage of water that is used for drinking.

### Explain

- Explain to the participants about the properties of water.
- Explain about the percentage of water present on Earth and the percentage of water that is used for drinking purpose.

### Notes for Facilitation

- Tell the participants that water (chemical formula: H<sub>2</sub>O) is a transparent fluid and is the major constituent of the fluids of organisms.
- Tell them that water is a liquid at standard ambient temperature and pressure but it often co-exists on Earth in its solid state, ice; and gaseous state, steam.
- Explain the properties of water:
  - It is the most abundant molecule on Earth. It is composed of two hydrogen atoms and one oxygen atom held together by covalent bonds at a unique 104° angle.
  - Physicists and chemists have thoroughly studied it; many of liquid water's unique properties remain mysterious.
  - It is the only substance that can exist as a liquid, a gas and a solid (ice) at the same time.
  - It is considered as the "universal solvent" and also a powerful and natural cleanser.
  - An individual water molecule is unique. If a snowflake is melted and then refrozen under the same natural conditions, it will reform back into the exact same snowflake.
  - The information content in the water molecule is changed by interaction with chemical toxins and other pollutants.
  - It possesses memory, stores information and is a carrier of energy and vibrations.

- Water that is exposed to pollutants carries negative and destructive particles/energies, which are then absorbed by all the cells in a body and cause chronic illness and disease.
- All water that exists, circulates around the planet; therefore, all water we use and consume is recycled.
- Depending on the travel path of water, the pollutants, compounds and chemicals it mixes will change its ionic properties. This in turn affects its taste, smell, pH level, microorganism content, mineral content and "information."
- Discuss about water – just a liquid or much more?
  - Many researchers are convinced that water is capable of "memory" and this quality it depicts by storing information and characteristics from the environment it comes in contact with.
  - The research suggests pollutants impart negative qualities onto the water molecule.
  - Good filtration techniques can restore water to a state as nature originally intended.
  - A prominent Japanese Scientist, Dr. Masaru Emoto, conducted experiments that clearly demonstrated the memory of water and also the fact that it carries information.
  - Dr. Emoto performed a series of experiments, observing the physical effects of words, prayers, music and environment (pollutants) on the crystalline structure of water.
  - The results were truly remarkable. It proved that water is a multi-dimensional liquid crystal.
  - Correlating experiments were conducted at the Institute for Noetic Sciences (IONS) and the Adjunct Faculty at Sonoma State University.
- Tell that over two-thirds (about 72%) of the Earth's surface is water. Very little of this water is drinkable.
- Inform them that 96% of the Earth's water is salt water. The remaining is fresh water, more than 68% of which lies within glaciers and ice and approximately 30% of it is underground. This leaves just about 1% of the freshwater on the surface.
- Tell that we all think or have heard the phrase "water is water" and take it for granted since it is the most abundant molecule on Earth and flows readily from our kitchen or bath taps.
- Inform them that the issue of water pollution has proved that we need to change our mind-set and use water judiciously.
- Tell that water purification is necessary and not a luxury. Highly effective and inexpensive water filtration methods and techniques are available to everyone.
- Activity, Group Discussion: Hint
  - 96% of the Earth's water is salt water. Around 98% of the remaining freshwater is in the form of glaciers and polar ice caps. This leaves just about 1% of the freshwater on the surface in the form of rivers and lakes. Not all of this freshwater is safe for human consumption as it is contaminated with bacteria.

## UNIT 3.2: Water Treatment Methods

### Unit Objectives

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

- List the various water treatment methods
- Describe the different types of filters
- Explain the water purification process

### Ask

- Ask the participants if anyone knows how to treat water chemically.

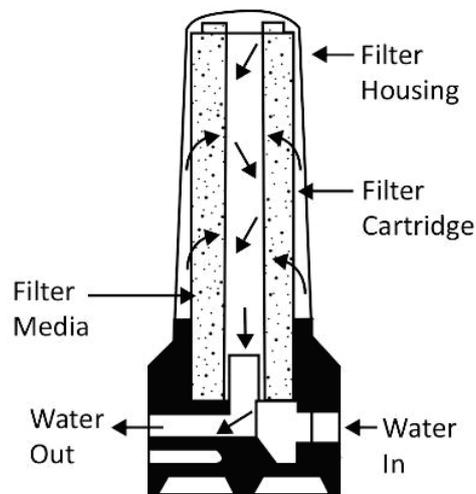
### Explain

- Explain to the participants about water treatment chemicals.

### Notes for Facilitation

- Tell the participants that drinking water is treated with iodine or chlorine dioxide.
- Tell that an algicide is a chemical which when added to water kills algae and bluegreen algae.
- Tell that the use of algicides to control algal blooms is not recommended for environmental reasons and the chemical should only be used in emergency cases.
- Explain that all copper-based algicides will damage and in most cases kill algal cells. This reaction leads to the release of algal toxins into the water.
- Tell that if algicides are used in potable water supply reservoirs, the water should not be used until the toxins and odors degrade.
- Explain that the toxins produced by blue green algae are generally very stable compounds that are resistant to chemical breakdown and may remain in natural waters for several months.
- Explain that the risks associated with using copper-based algicides include:
  - The accumulation of copper in the sediments
  - The growth of species of blue-green algae that are resistant to the algicide, which may cause greater water quality problems
  - The mass release of toxins from the algal cells
- Tell that chlorine is, essentially, a bleach. Although it is not said to be harmful in small quantities, it has been linked to cancer as a known carcinogen.
- Explain that chlorine dioxide water treatment, through the use of a dosing system, can have instant high yield results in water purification because of its unique selective properties.

- Tell that primary clarifiers help to slow the speed of the wastewater to allow the solids to settle outside of the wastewater.
- Tell that a secondary clarifier can be used to settle out microorganisms from the activated sludge process.
- Tell that clarifiers typically have rotating arms, which help to remove scum from the surface of the water.
- Tell that the sludge or bio solids are usually collected at the bottom of the clarifier and then sent to a digester for further treatment.
- Explain that Aquamira water purifier is a chlorine dioxide-based system that treats 30 gallons of water.
- Inform that chlorine dioxide is more effective with less health risks, odor, and taste than iodine. So, Aquamira has become very popular.
- Activity, Identification Game:
  - Solutions:





**Skill India**  
कौशल भारत - कुशल भारत



Skilling India in Electronics

# 4. Installing Water Purifiers

Unit 4.1 - Water Purifiers

Unit 4.2 - RO Water Purifiers

Unit 4.3 - Installing an RO Water Purifier



ELE/N3118  
ELE/N3119

## Key Learning Outcomes

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

- Describe water purifiers
- List the different types of water purifiers
- Describe an RO water purifier
- Describe the functioning of RO water purifiers
- List the proper uses of RO water purifiers
- Describe the pre-installation process of RO water purifiers
- Install RO water purifiers
- Describe the post-installation process of RO water purifiers

## UNIT 4.1: Water Purifiers

### Unit Objectives

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

- Explain water purifiers
- List the different types of water purifiers

### Ask

- Ask the participants about the water purifiers and their working.
- Ask about the types of water purifiers.

### Explain

- Explain to the participants about the working of water purifiers.
- Explain about the bath and shower filter.
- Explain about disillers.
- Explain the difference between water filtration and disillation.

### Notes for Facilitation

- Explain to the participants that the most common methods of water treatment for home use include reverse osmosis (RO), disillation, carbon filtration, microfiltration, ultra-filtration and ultraviolet (UV) light sterilization.
- Tell them that the four basic types of water purifiers for home use are:
  - Filters - Carbon, Kinetic Degradation Fluxion (KDF), Activated Alumina (fluoride removal) and Sediment
  - Reverse Osmosis Units
  - Disillers
  - UV Sterilizer Units
- Tell that all filters use a substance that traps, absorbs or modifies the pollutants from the incoming water. The "active" substance inside a filter is normally called the medium or media.
- Tell that the trapped or absorbed pollutants will either clog the media or the media will lose its electromechanical properties, resulting in an eventual filter replacement.
- To overcome this, multi-stage filters are used.
- Inform that aeration, deionization and corona ion are not well suited to home use due to cost, physical space and complexity.

- Explain to the participants that sediment filters are used for removing dirt, sand and other particles.
  - They work by the simple mechanical sieve action.
  - They have different gradients or sieve sizes.
- Tell that the pleated construction type is preferred because the wound string or foam types tend to support bacterial growth.
- Tell them that carbon filters are typically used to remove a wide variety of chemical pollutants and are very effective on volatile organic chemicals (VOC's). They are effective in removing chlorine, bad tastes, smells and radon.
- Tell that the best carbon filters are those which are combined with a bacteria growth inhibitor and are highly effective in removing chlorine.
- Tell that activated carbon is manufactured by heating wood, coal or coconut shells in a special process that creates millions of microscopic pores.
- Tell that activated carbon made from coconut shells is considered the best.
- Tell that there are two forms or composition of activated carbon, granular and block.
- Tell that activated carbon coconut shell is a highly efficient medium for absorption and is used in gas masks, water filters and air filters and is even used as a medicine.
- Explain to the participants that the effectiveness of carbon filtration depends on several factors:
  - The amount of time the water is in contact with the carbon.
  - The density of the carbon
  - The amount of carbon
- Inform that the primary purpose of a shower water filter is to remove chlorine and its by-products from the shower.
- Tell that the fluoride added to 90% of drinking water is fluorosilicic acid, also known as hydrofluorosilicic acid.
- Tell them that fluorosilicic acid is very dangerous; clean-ups must be done by a qualified crew who is properly protected in non-hazardous material suits.
- Explain to the participants that two new kinds of filter media have been developed to remove dissolved toxic metals and fluoride compounds from tap water.
  - Activated alumina (synthetic alumina crystals)
  - Redox reduction/oxidation (KDF)
- Tell that the activated alumina media consists of a compound that strongly attracts and traps dissolved toxic metals.
- Explain that the KDF filtering process consists of two dissimilar metals, high-purity Copper (Cu) and Zinc (Zn) which create an electro-chemical exchange reaction.
- Explain that KDF is sub-divided into two types:
  - The KDF-55 media (ERA-6500) is specifically designed to remove chlorine, lead and other water-soluble heavy metals.
  - The KDF-85 (ERA-9500) media removes chlorine and reduces iron and hydrogen sulfide from water supplies.

- Tell that KDF effectively destroys bacteria, most parasites and some viruses and it changes chlorine into harmless compounds.
- Tell that the KDF media has various granular sizing from very fine to coarse, and a properly designed filter uses the appropriate granular size for low-flow applications.
- Inform that CRYSTAL QUEST® family of water filters are designed with the correct amount and granular sizing of KDF in combination with Coconut Shell GAC to yield highly effective and long-lasting water filtration systems.
- Inform that in the redox and carbon combination, the redox media takes care of bacteria and chlorine. This extends carbon's useful life and frees it to be more effective in removing organic compounds.
- Explain that if "Alumina" is also included, it greatly enhances the removal of fluoride.
- Explain that the media types which use redox (KDF) and carbon in conjunction are very economical. They create a much longer-lasting filter.
- Explain to the participants that reverse osmosis process is a slow process where water is forced through a semi-impermeable membrane, leaving the impurities behind.
- Tell that a reverse osmosis (RO) water purification unit employs a semi-permeable synthetic membrane with pores just large enough to pass water molecules but too small for other pollutants.
- Tell that the RO membrane is the heart of any reverse osmosis system, and a state-of-the-art membrane consists of a thin film composite (TFC) synthetic material.
- Tell that the process is called reverse osmosis because, instead of the molecules equalizing the concentrations on both sides of the membrane, the water pressure creates pure water on one side and a concentrate of the pollutants on the other side.
- Inform that reverse osmosis units are especially known for ultra-pure water.
- Tell some drawbacks of an RO system:
  - Approximately 60% of the incoming water becomes wasted and is flushed down the drain.
  - It removes beneficial minerals from the water and produces water that is slightly acidic with a pH of 4.5 to 5.5.
- Tell that private good water must always be tested at least once a year to determine its contamination types and concentration levels.
- Explain that distillers boil the water, producing steam. The steam is then cooled and condensed back into water.
- This process extracts many minerals and ionic elements that gives water its nutritional benefit and natural taste.
- Tell about the two types of pollutants that distillers do not remove properly from water or even make it worse:
  - VOC's
  - Nitrates
- Tell that most naturopaths and holistic nutritionists dislike distilled water because they say it leaches minerals from bones and teeth.
- Inform that UV sterilizers are designed for the single specific purpose of disinfecting water and do not remove other pollutants.

- Tell that this process is immediate, requires no holding tanks and takes nothing away from the water, except for the undesired pathogens.
- Tell that a major advantage of UV treatment is that it is capable of disinfecting water faster than chlorine, without cumbersome retention tanks or adding harmful chemicals to the drinking water.
- Tell that these are of very reasonable cost and have high reliability.
- Tell that the UV lamp of a good unit will be enclosed in a quartz glass tube and will have lamp failure alarms along with other status monitoring indicators.
- Tell that a UV unit should always be used as the last stage in a multi-stage water purification system.
- Explain to the participants that multi-stage and RO drinking water systems come with filter cartridges that can process about 5,000 - 10,000 gallons of tap water.
- Tell them that they should encourage changing the filters once every 12 or 15 months for good health.
- Tell that multi-stage shower filters can process approximately 20,000 - 25,000 gallons of tap water and cost about \$0.023 per shower.
- Tell that boiled water is both wasteful and expensive with a typical average cost of \$4.75 per gallon.
- Explain that the household that uses 5 gallons per day, and the initial capital cost of one of the state-of-the-art multi-stage carbon filter system being around \$150.00, the calculation is, \$0.08 per gallon for the first year of ownership and about \$0.05 per gallon in subsequent years.
- Tell that the more conservative figure of \$2.50 per gallon and 5 gallons per day yields an annual cost of around \$4,560.
- Also, tell that with a capital cost of \$300.00 in an RO system, the RO filtered water would cost \$0.16 per gallon in the first year of ownership and about \$0.12 per gallon in subsequent years.
- Tell that having own in-home filtration system makes perfect economic sense.
- Activity Handling Strategy, Match the Following:
  - Ask the participants one by one to answer the questions.
  - Answers:
    - 1-d
    - 2-c
    - 3-a
    - 4-b

## UNIT 4.2: RO Water Purifiers

### Unit Objectives

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

- Describe an RO water purifier
- List the purposes of RO water purifiers
- List the components of RO water purifiers
- Describe the functioning of RO water purifiers

### Ask

- Ask the participants if they know about RO filters.

### Notes for Facilitation

- Tell the participants that water filters can be useful to improve water quality but they must be chosen carefully.
- Tell that distillation and reverse osmosis filters are usually located in the kitchen and they both work well against a variety of water contaminants.
- Tell that if a water filter is located on the incoming supply line, just after it enters the house, it can be considered a whole-house system and can be practical with some filtration strategies.
- Explain that individual filters, often called point-of-use filters, can be used at specific locations.
- Explain that water filtration has many different applications - commercial, industrial and personal.
- Tell that different types of water filtration methods serve different purposes.
- Explain that sediment filters are typically used as a pre-treatment method to help remove debris and particles from water.
- Tell that activated carbon filters have a porous surface which traps microscopic particles and large organic molecules.
- Tell that the activated surface areas cling to (adsorb) smaller organic molecules. There are two basic types of activated carbon filters; granular and solid block.
- Explain that ceramic filters may be treated with silver - a powerful antibiotic - for the reduction of bacteria and many other microorganisms.
- Tell that they may also contain carbon for the reduction of chlorine and other chemicals.
- Explain that in UV filtration, UV radiation is used to inactivate microorganisms, thereby sanitizing water. However, this method will not remove particles or chemicals and must often be combined with other methods of filtration.

- Explain that osmosis is the diffusion of water across a semi-permeable membrane from an area of lower solute concentration to an area of higher solute concentration. Reverse osmosis is the reverse of this process.
- Tell that this method of purification is highly effective, significantly reducing most particles, chemicals and microorganisms but it uses a lot of water and is more expensive.
- Explain that in the ion-exchange process, water travels across a bead-like spherical resin material containing ions, which are exchanged with the ions in the water.
- Explain how RO water purifiers work:
  1. The dissolved inorganic solids and harmful microbes are eliminated from the water with the help of a semi-permeable membrane.
  2. Normal tap water passes through the membrane; it does not allow impurities to pass through.
  3. The contaminants and impurities are directly washed down the drain.
- Tell them that the factors affecting the performance of RO water purifiers are:
  1. The quality of membranes and filters present in the RO water purifier
  2. The amount of impurities and contaminants present in the tap water
  3. Water temperature
  4. Pressure of incoming water
- Tell them about the basic components of RO water purifiers:
  1. Pre-Filter(s)
  2. Auto Shut Off Valve (SOV)
  3. Flow Restrictor
  4. Post Carbon Filter
  5. Storage Tank
- Activity Handling Strategy, Role Play:
  - Hint
    - Supply line valve
    - Pre-filter - Sediment
    - Carbon filter
    - RO membrane
    - Water tank
    - Post filter
    - Shut-off valve
    - Check valve
    - Flow restrictor
    - Drain line

## UNIT 4.3: Installing an RO Water Purifier

### Unit Objectives

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

- Describe the pre-installation process of RO water purifiers
- Install RO water purifiers
- Describe the post-installation process of RO water purifiers

### Ask

- Ask the participants if anyone knows about the RO installation steps.

### Explain

- Explain to the participants about the installation of RO components.

### Notes for Facilitation

- Explain to the participants about faucet installation:
  - If the sink has a sprayer, it may be disconnected for faucet installation.
  - To make the faucet-mounting hole, check below to make sure that the drill will not interfere with anything there.
  - A 2" flat surface is required, not exceeding 1-1/4" thickness.
  - The faucet should be positioned so that it embeds into the sink and the spout swivels freely for convenience.
- Tell the installation procedure for porcelain, enamel, ceramic on metal or cast iron:
  - Mark the center with the center punch for the 1/4" pilot hole.
  - Carefully drill a pilot hole with the masonry bit through the porcelain and stop when metal shows.
  - Switch the bit to a standard metal cutting bit to continue to cut through the metal below the porcelain surface.
  - Continue to enlarge the pilot hole with larger masonry and metal cutting bits until the hole is 1/2".
- Tell the installation procedure for stainless steel sink:
  - Mark the center with the center punch for the 1/4" pilot hole.
  - Drill the pilot hole.
  - Continue to enlarge the hole with a larger size drill bit until it is 1/2".
  - Clean up the sharp edges.

- Explain to them about mounting the faucet:
  - Disassemble hardware from the threaded shank. Chrome base plates and rubber washers slide up the shank to the faucet body.
  - Feed threaded shank through the sink hole and orient the faucet. From below the sink, slide the lock washer and the hex nut over the threaded shank and tighten with a wrench.
- Explain angle stop valve and tubing installation:
  - Shut-off the cold water supply using the angle stop shut-off located under the sink.
  - Relieve the pressure by opening the handle on the faucet on the cold water side.
  - Using an adjustable wrench, disconnect the riser tube from the existing cold water shut-off.
  - Move the tubing away from the valve to make room for the John Guest Angle Stop Valve.
  - Connect the swivel end of the John Guest Angle Stop Valve to the threads on the cold water shut-off. This connection should only be hand tight.
  - Connect the riser tube to the male end of the John Guest Angle Stop Valve and tighten with a wrench.
  - Connect a length of 1/4" tubing between the John Guest Fitting on the Angle Stop Valve and the inlet of the RO unit.
- Explain installation using copper tubing/pipe or tubing, chlorinated polyvinyl chloride (CPVC) and gray flexible riser tubes:
  - Turn off the cold-water valve from under the sink or the main water line valve for the whole house.
  - Before installing the saddle valve, make sure the piercing lance does not protrude beyond the rubber gasket.
  - Assemble the saddle valve on the tube/pipe
  - Turn the handle clockwise until it stops to pierce the tube/pipe.
  - Turn on the water supply to pressure cold water line.
  - Tighten the nut/seal with a wrench around the valve stem.
  - Connect the tubing to feed the water valve using a brass compression nut, sealener insert and plastic sleeve.
  - To open the valve, turn the handle counter clockwise.
- Tell about saddle valve installations with another metal pipe:
  - Turn off the cold-water supply.
  - Drill 3/16" hole at the desired location.
  - Make sure the piercing lance does not protrude beyond the rubber gasket.
  - Assemble the saddle valve on the pipe, aligning with the hole.
  - Turn the saddle valve handle clockwise to close the valve.
  - Tighten the nut/seal around the valve stem with the wrench.

- Connect the tubing to the feed water valve using a brass compression nut, spacer insert and plastic sleeve.
- Turn on the cold water supply.
- To open the valve, turn the handle counter clockwise.
- Tell about faucet adaptor, ball valve and tubing installation:
  - Shut-off the cold water supply using the angle stop shut-off located under your sink.
  - After shutting off the valve, relieve the pressure by opening the handle on the faucet on the cold water side.
  - Using an adjustable wrench or basin wrench, disconnect the riser tube from the bottom of the faucet.
  - Thread onto the female side of the faucet adaptor to the male end of the faucet.
  - Thread the riser tube onto the bottom of the faucet adaptor.
  - Connect a length of 1/4" of tubing between the fitting on the side of faucet adaptor and the Ball Valve.
- Explain drain saddle valve installation:
  - Drill 1/4" hole at the mark through one side of the pipe.
  - Remove the backing from the gasket and place the adhesive side towards the fitting half of drain clamp, around the hole.
  - Position both the halves of the drain saddle on the drain pipe so that the opening aligns with the drilled hole. Use a small drill bit to verify that the drain clamp is properly aligned.
  - Secure the drain saddle clamp on the valve with the provided bolts and nuts.
- Tell that It is advisable to complete the initial tubing connections.
- Tell them how to install the RO membrane- O-ring end first, the carbon re-filter(s) and the sediment pre filter in vertical mounted housings.
- Tell that the RO unit is normally mounted to the right or left sink cabinet sidewall, depending on where the supply tank is to be located.
- Tell that pre-filling the storage tank is recommended, so that there is sufficient pressure to check for leaks and enough water to flush the carbon post filtration.
- Tell them that they should connect the feed line that will join the RO unit directly to the bladder tank.
- Tell that the supply tank should be placed under the counter or within 10 feet of the RO unit.
- Tell them that with all components in place, they should complete the final tubing connections.
- Tell them that prior to start-up:
  - Check all the fitting connections.
  - Open the ball valve, allow the system to pressurize and check for leaks.
  - Open the valve on the bladder tank and open the faucet until water flows.

- Close the faucet, wait for five minutes and check for leaks.
- Allow the system to produce a full tank of RO water (2-3 hours).
- Tell that they should flip the faucet's lever up to keep the faucet on. Do this and allow the tank to be completely drained of all water.
- Tell to close the faucet and re-inspect the system for leaks.
- Tell to allow the system to produce water for 4 hours; at this point the bladder tank will be full.
- Tell to open the faucet again and empty the tank for a second time.
- Tell to close the faucet and allow the unit to produce another tank of water.
- Tell that at this point the supply line to the ice maker connection (optional) may be opened and RO water is ready to be consumed.
- Tell them to inform that the filter in the system should be replaced every year.
- Tell them to inform that the membrane in the system should be replaced every other year.
- After all the filters are removed from the system, housings have been cleaned, tank is empty, and faucet is open:
  - Add 1 gallon of water to a clean bucket.
  - Add 1 teaspoon of unscented household bleach.
  - Add 1 cup of this solution to each filter housing.
  - Tighten the filter housings with the solution on the RO assembly.
  - Connect the membrane housing and the feed tube.
  - Open the tank valve and the feed pressure valve.
  - Allow water to fill the RO housing assembly until it comes out of the faucet.
  - Close the faucet.
  - Allow water to run for 5 minutes.
  - Shut-off the feed pressure.
  - Allow solution to stand for 30 minutes.
  - Open the faucet and allow the system to drain.
  - Remove water from the housings before installing new filters and membrane.
  - Install new filters, tighten housings and reconnect all tubing connections.
  - Open the feed pressure valve and check for leaks.
  - Allow the system to make a full tank of water.
  - Run 2 cycles to rinse out the sanitizing solution before using the water.
- Activity Handling Strategy:
  - Hints
    - Shut the water supply line.
    - Mark screw locations on the wall, then screw two self-taping screws on the marked positions.
    - Use mounting screws to hang the purifier on the wall.

Tighten the SS ball valve to the port of the 3-way connector.

To connect the raw water supply to the 3-way connector, first connect the threaded end of the connector to the raw water supply and then connect the other end to the tap.

- Connect the white pipe's one end to the SS ball valve and the other end to 'Water in' fitting for the raw water supply.

The left side of the purifier has an upper push fit elbow fitting labelled as REJECT WATER.

Connect the blue pipe's one end to the Reject water fitting and leave the other end in the drain.

Check that the filters are soaked in water before connecting the power supply.

Open the SS ball to start the flow of water into the purifier.





**Skill India**  
कौशल भारत - कुशल भारत



Skilling India in Electronics

# 5. Repairing RO Water Purifiers

Unit 5.1 - Understanding Customer Complaints

Unit 5.2 - Maintenance and Troubleshooting of RO Water Purifiers

Unit 5.3 - Safety Rules



ELE/N3101, ELE/N3118  
ELE/N3119

## Key Learning Outcomes

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

- Inspect, diagnose and identify customer issues
- Test the proper working of purifier
- Perform maintenance of RO Water Purifiers
- Repair water purifiers
- Troubleshoot frequently occurring problems and provide solution
- List the safety rules

## UNIT 5.1: Understanding Customer Complaints

### Unit Objectives

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

- Inspect and communicate the issue
- Diagnose and Identify the issue
- Explain the solution
- Test the proper working of purifier
- List the dos and don'ts
- Perform documentation

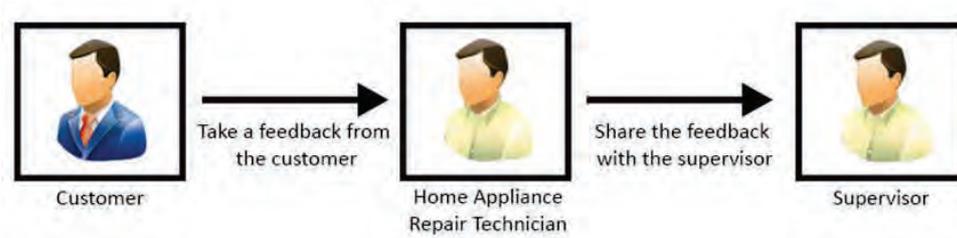
### Ask

- Ask the participants if they know about telephone etiquette.

### Explain

- Explain to the participants about telephone etiquette with a role play scenario.
- Explain what should be considered while interacting with a customer:
  - Smile and greet the customer
  - Listen to the customer's problem/request
  - Offer the most effective solution
  - Take feedback of the customer and share it with the supervisor
- Explain the to-do list to be followed at a customer's premises:
  - Enquire about the symptoms and history of the problem
  - Ask about the year of purchase, service and warranty
  - Identify the problem based on the customer's information and examination of the purifier
  - Communicate the problem identified to the customer and inform about the possible reasons
  - Inform the customer regarding the costs involved and hand over the invoice after the task is completed
  - Ensure service is provided to achieve 100% customer satisfaction
- Tell how a solution must be suggested to the client for an issue:
  - Suggest solutions to the customer
  - Explain the time for fixing the issue
  - Explain the service method - repair or replacement of part
  - Explain the costs involved
  - Seek the customer's approval for further action

- Tell the steps to be performed for a check after repairs:
  - Check that all connections are secure
  - Check for leaks
  - Check the flow of water
  - Check the total dissolved solids(TDS) of water
- Explain the procedure to be followed for taking customer feedback with the help of the following diagram:



*Fig 5.1.1: Procedure of customer feedback*

- Activity Handling Strategy: Role play:
  - Hints
    - Select two candidates from the audience and assign them their roles.
    - Make one of them a technician and the other will be an angry customer.
    - When the technician is in call with the customer, he should speak very politely.
    - When talking to an angry customer, he should let him speak first.
    - He should not interrupt him.
    - When he's done, the technician should politely apologise for mistake at own end.
    - He should offer him some free service or any tool/equipment to calm him down.

## UNIT 5.2: Maintenance and Troubleshooting of RO Water Purifiers

### Unit Objectives

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

- Perform maintenance of RO Water Purifiers
- List the frequently occurring problems
- Troubleshoot and provide solution to the problems

### Ask

- Ask the participants if they know about the problems in water filters and troubleshooting.
- Ask the participants if they know about a TDS meter.

### Explain

- Explain troubleshooting of a water purifier.
- Explain a TDS meter and its functionality.

### Notes for Facilitation

- Tell the participants that one of the commonest problems that occurs with the water filtration system is deposition of sediments.
- Tell that if there are weird sounds coming from the appliance, it indicates a fault in the appliance. The matter must be taken seriously, and the customer should be advised to opt for a repair or a replacement service.
- Tell that if there are sediments in the water or if the water tastes weird, it implies that there must be some problem with the filters.
- Tell them that there are filters that work on electricity. These filters would not work if there is a power cut.

- Explain the troubleshooting chart as given in the following figure:

Problem	Cause	Solution
Not enough water/no water from the tap	The feed water input is blocked or closed	Open the valve or unblock.
	The sediment/Carbon pre-filter or the carbon filter is blocked	Replace the filters.
	Low incoming water pressure	If pressure is below 40 PSI, install a booster pump.
	The RO membrane is polluted	Replace the RO membrane
	The air bladder in the storage tank is damaged	Replace the storage tank.
	The storage tank valve is closed	Open the valve.
	No water to drain. The drain flow restrictor is blocked	Replace the drain flow restrictor.
	The check valve on the RO membrane housing is stuck	Replace the check valve.
	The automatic shut-off valve is malfunctioning	Replace the automatic shut-off valve.
Low water pressure from the water outlet faucet/tap	Air pressure in the storage tank is incorrect	Empty the storage tank. Locate the air valve stem and add air. If there is still water in the tank, continue to add air until all the water is removed. Once all the water is removed, continue to add air and pressurize to 8 PSI. Re-install the tank, turn on the feed supply to the system and allow the tank to fill.
	The post carbon filter is blocked	Replace the post filter.
	The storage tank valve is partially closed	Open the valve.
	The faucet is out of adjustment or faulty	Replace or repair the faucet
	Heavy water use. The storage tank is empty.	Allow the storage tank to refill.

Problem	Cause	Solu on
Output water has high TDS	The pre filter is blocked	Replace the pre filter.
	The RO membrane is not correctly sealed in the membrane housing	Check that the RO membrane is correctly installed.
	The RO membrane is exhausted	If the RO membrane exceeds its life me then replace it.
	Output water and drain water lines are reversed	Change the connec ons.
	The automa c shut-o valve is not dosing	Replace the automa c shut-o valve.
	The post carbon filter has not been cleaned properly	Clean the post carbon filter.
Unusual taste and odour in the output water	The post carbon filter is blocked/exhausted	Repair/Replace the post carbon filter.
	The RO membrane filter is blocked/exhausted	Repair/Replace the RO membrane filter.
	The storage tank is not cleaned properly	Clean the storage tank.
	Storage of purified water in the tank for a long me	Drain the stored water and clean the storage tank.

Fig 5.2.1: Troubleshooting chart

- Explain the common under sink water filter problems:
  - Clogged filter
  - Tank damage
  - Extreme hard or soft water
- Explain the reason for low water output:
  - Clogged pre and post filter
  - Damaged membrane
  - Low water pressure
- Explain to the participants that a TDS meter indicates the TDS of a solu on. It measures the conduc vity of a solu on and es mates the TDS from that.
- Explain that dissolved organic solids and microscopic solid par des do not a ect the conduc vity of a solu on, so a TDS meter does not include them in its reading.
- Explain that the most accurate way to measure TDS of water in a laboratory is to evaporate the water, leaving behind dissolved solutes as r esidue and then weighing the residue.
- Tell that a TDS meter typically displays the TDS in parts per million (ppm).

- Tell that the TDS meter is used to test the water quality before and after installing the RO system.
- Explain the FAQs of a TDS meter:
  - What does the TDS meter do?
  - How do I use the TDS meter?
  - Why is the TDS meter important?
  - How often should I measure the TDS level in my water?
  - What type of batteries does the meter use?
  - What cannot be detected by the meter detect?
- Explain the steps to check the valves of an RO system:
  - Ensure that the tank is not empty
  - Remove the drain line from the drain saddle
  - Turn off the water supply line
  - Turn-on the tank valve
  - Check if the drain water is running
  - If the water is running, then the auto shut-off valve or check valve (CV) is defective
  - Replace the CV and check water drainage
  - If water stops, stop testing
  - If water continues to drain, replace the ASV
- Explain the steps to sanitize an RO system:
  - Turn off the water supply line and open the faucet
  - Place a towel/ tray under the unit for water spills
  - Empty the tank and shut the faucet off
  - Remove all filters and membrane
  - Replace the filter housings
  - Add the sanitizer
  - Turn on the water supply line
  - Fill the system with sanitizing solution
  - Flush out the system until clear water starts flowing
  - Wait for few minutes and flush again
  - Re-install all filters and membrane
  - Fill and flush the system once more
- Tell them about the filter changing schedule:
  - Sediment filter must be changed every 6 - 12 months
  - Carbon filter must be changed every 6 - 12 months
  - Carbon post filter must be changed every 12 months
  - Reverse osmosis membrane must be changed every 24 months
- Explain the steps of changing the filter:
  - Turn off the water supply line and open the faucet
  - Place a towel/ tray under the unit for water spills

- Unscrew the filter housing cap and remove the cartridge
- Wipe the O-ring clean and replace if damaged
- Rinse the inside of the filter housing and insert the new filter
- Lightly lubricate the O-ring and place it back
- Carefully screw back the housing cap
- Turn on the water supply and check for leaks
- Turn on the faucet and allow water to flow
- Explain steps of changing the membrane:
  - Turn off the water supply line and open the faucet
  - Place a towel/ tray under the unit for water spills
  - Disconnect the tubing from the membrane housing
  - Free the membrane from the clips
  - Wipe the O-ring clean and replace if damaged
  - Unscrew the membrane housing cap and remove the membrane
  - Rinse the inside of the membrane housing and insert the new membrane
  - Lightly lubricate the O-ring and place it back
  - Replace and tighten the membrane housing cap
  - Turn on the water supply and check for leaks
  - Turn on the faucet and allow water to flow
- Tell a few simple steps for troubleshooting:
  - Identify the exact nature of the problem by observing symptoms
  - Isolate the cause of the problem by testing the likely cause
  - Resolve the problem
- Activity Handling Strategy: Identification game
  - Ask the participants to answer one by one.
  - Answer:
    - Collect water in a clean glass
    - Remove the cap and turn the TDS meter on
    - Insert the meter into the water
    - Lightly stir the water to displace any air bubbles
    - Wait for the display to stabilize
    - Press the HOLD button to view the reading
    - Remove the meter and shake off excess water
    - Replace the cap
- Activity Handling Strategy, Match the Following:
  - Hints
    1. iii
    2. iv
    3. i/ii
    4. ii/i

## Practical

The water purifier is giving low water pressure from dispensing faucet. How would you fix this?

Solution:

- Open the faucet.
- Empty water from the holding tank.
- Shut off the feed water.
- Remove the holding tank from under the sink.
- Locate the air valve stem and add air.
- Continue to add the air until all the water present is removed from the tank, at 8 PSI pressure.
- Re-install the tank and turn on the feed supply allowing the tank to fill.

## UNIT 5.3: Safety Rules

### Unit Objectives

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

- List the safety rules

### Ask

- Ask the participants if they know about general safety procedures.

### Explain

- Explain to the participants about general safety procedures.
- Explain safety procedures during installation.
- Explain safety procedures while doing repair or maintenance.

### Notes for Facilitation

- Explain general safety procedures:
  - Check if the tools and equipment are in a good working condition
  - Wear personal protective equipment
  - Keep the work area clean and free from clutter
  - Maintain proper body posture at work
  - Follow safety rules and guidelines
  - Report any breach of safety
- Explain safety procedures during installation:
  - Disconnect the water supply before beginning installation
  - Install the purifier away from direct sunlight
  - Connect the water feed line to cold water supply only
  - Never touch the membrane with bare hands
  - Follow manufacturer's instructions regarding installation
- Explain safety procedures while doing repair or maintenance:
  - Ensure that all connections are secure
  - Never apply bleach or cleaning solution to the membrane
  - Do not keep the filter cartridge outside its packing
  - Do not dip the TDS meter beyond the water limit

- Activity Handling Strategy, Role Play:

- Hints

- Do not make any sudden movement.

- Turn off the drilling machine from the button present on the equipment.

- Safely keep the drilling machine aside, wherever you find a stable surface.

- Clean your hands by rubbing it on your clothes.

- Now rub your finger, either on upper lid or on lower lid, wherever you feel there is a particle.

- If it doesn't come out, wash your eyes off with water.

- Gently swab with a cotton or soft cloth.



**Skill India**  
कौशल भारत - कुशल भारत



Skilling India in Electronics

## 6. Repairing Mixer/Grinder/Juicer

Unit 6.1 - Mixer/Grinder/Juicer

Unit 6.2 - Repairing Mixer/Grinder/Juicer

Unit 6.3 - Safety Rules



ELE/N3101  
ELE/N3120

## Key Learning Outcomes

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

- Define mixer/grinder/juicer
- Identify different types of mixer/grinder/juicer
- Describe the parts and working of mixer/grinder/juicer
- Perform the cleaning of mixer/grinder/juicer
- Troubleshoot mixer/grinder/juicer problems
- Service/replace the components of mixer/grinder/juicer
- Practice safety measure while using mixer/grinder/juicer

## UNIT 6.1: Mixer/Grinder/Juicer

### Unit Objectives

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

- Define mixer/grinder/juicer
- Identify different types of mixer/grinder/juicer
- Recognize parts of mixer/grinder/juicer
- Describe working of mixer/grinder/juicer
- Perform the cleaning of mixer/grinder/juicer

### Ask

- Ask the participants if they can tell the history of mixer/grinder/juicer.
- Ask them if they know the purpose and use of a mixer/grinder.
- Ask the participants if they can tell the purpose of a juicer.
- Ask them if anyone knows about disassembling a mixer grinder.

### Explain

- Explain how in the earlier times people used to do grinding by using stones.
- Give the introduction of mixer grinder.
- Explain the functioning of a juicer
- Explain disassembling of a mixer grinder.

### Notes for Facilitation

- Tell the participants that in 1908 Herbert Johnson, an engineer for the Hobart Manufacturing Company, invented an electric standing mixer.
- Tell that by 1915, his 80-quart mixer was a standard equipment for most large bakeries.
- Tell that in 1919, Hobart introduced the Kitchen Aid Food Preparer (stand mixer) for home use.
- Tell that traditionally, the products were crushed with Batan. The utility is made up of stone and is widely used in India and South Asia.
- Inform them about the history of the 19th century mixer:
  - Prior to 19th century, twigs, typically from apple or peach trees, would be bundled together to create a whisk-like implement, but its purpose was often more to impart the fragrance from the wood into batters and other mixes rather than to actually mix the ingredients together.

- It wasn't until the mid-19th century that the wire whisk was invented in France to aid in French cooking and subsequently introduced to the masses.
- The first mechanized mixer can be attributed to Ralph Collier, a tinsmith from Baltimore, Maryland, who patented his "Egg Beater" with rotating parts in December 1856.
- Collier's invention was followed by British inventor E.P. Griffith's version in 1857. In contrast to Collier's hand-held mixer, Griffith's version was fixed inside a pot.
- Two years later in 1859, J.F. and E.P. Monroe of the US patented another hand-turned rotary mixer.
- This rotary mixer was a new and improved egg-beater and could be used with equal advantage for mixing paint or other substances.
- Explain the early 20th century mixer history:
  - Johnson invented the revolutionized Eastman's electric eggbeater based on the concept of "planetary action," where the mixer moves the bowl in a circular motion in one direction while the beater rotates in the opposite direction.
  - By 1915, because of its heaviness and capacity for a massive 80 quarts, Johnson's Hobart mixer, simply named "Model H", was a standard equipment in many commercial bakeries and U.S. navy vessels.
  - In 1919, Hobart introduced the newly named Kitchen Aid Food Preparer (stand mixer) for home use.
- Tell the mixer history of the last 40 years:
  - For about 40 years, the electric mixer market was dominated by the dynamic duo of Sunbeam and Kitchen Aids but that all changed in 1973.
  - Carl Sontheimer was enamored by a demonstration of a food preparation machine and decided to make one of his own. He launched his Cuisinart Food Processor.
  - At the same time, the stand mixer market dramatically expanded to include more than a dozen brands representing over 30 models.
- Tell that the electric mixer is something that the vast majority takes for granted.
- Explain to the participants that the mixer grinder is an electrical device used mostly in kitchens across the world, for fine cutting, mixing, grinding and juicing operations.
- Tell them that the device is called by a pet name, mini-xi.
- Explain the functioning of a juicer:
  - A juicer is a tool used to extract juice from fruits, herbs, leafy greens and other types of vegetables in a process called juicing.
  - It crushes, grinds, and/or squeezes the juice out of the pulp.
  - Some types of juicers can also function as a food processor.
- Explain to the participants that an electrical motor is a device that converts electrical energy into mechanical energy.
- Explain that the motor works on the principle of the interaction between the magnetic field of a permanent magnet and the field generated around a coil conducting electricity.
- Tell that in the low and medium horsepower range, induction motors are the most popular motors today.

- Tell that the rotor conductors of squirrel-cage induction machine are aluminium bars connected to rings that shorts the ring together.
- Explain that AC single phase induction motors are classified by their start and run characteristics.
- Tell that an auxiliary starter winding is placed at right angles to the main stator winding to create a magnetic field.
- Tell that the current moving through each winding is out of phase by 90 degrees. This is called phase displacement.
- Tell that a capacitor-start induction motor only has a capacitor in series with the auxiliary winding during starting.
- Tell that a capacitor-run motor typically has a large non-polarized electrolytic capacitor in series with the auxiliary winding for starting, then a smaller non-electrolytic capacitor during running.
- Tell the capacitor start / induction run motors are similar in construction to split phase motors.
- The motor used in a mixer is Universal Motor which is a single phase induction motor.
- Components of a Universal Motor are motor shaft, motor casing, bracket for holding the chassis and a commutator brush.
- Give introduction to parts of a mixer:
  - Feeder Caps for adding ingredients
  - Lids
  - 1.5-litre break-resistant jar
  - 750-ml stainless steel jar for wet grinding
  - 300-ml stainless steel jar for dry grinding
  - Sealing rings for tight seal
  - Ice crush blade
  - Wet grinding blade - 6 point blade
  - Dry grinding blade
  - Threaded bottom discs
  - Collar for stability from countertop to refrigerator to table
  - Powerful motor with exclusive ALL-METAL DRIVE™ system for extra durability
  - Control panel
  - On button
  - Off button
  - Pre-set speeds for mixing, wet grinding, mincing, blending/whipping, dry grinding and ice crushing
  - Rotary switch to control 6 speeds
  - Pulse for each speed position for a precise control
- Tell about the types of blades:
  - Wet grinding blade
  - Dry grinding blade

- Chutney grinding blade
- Blender grinder blade
- Whipper blade
- Spatula
- Tell about the types of jars:
  - Litre jar
  - Litre super extractor
  - Grind n' store
- Explain how to use a mixer grinder:
  - Make sure the blender is plugged in, clean and in working condition.
  - Put the ingredients inside.
  - Close the lid and hold the cover tightly.
  - Push the ON button and choose an appropriate speed.
  - Open it up and pour it out.
  - After cleaning, wipe with a soft cloth.
- Tell about the components of a mixer grinder:
  - Coupler
  - Fuse
  - Knob
  - Switches
  - Motor
  - Power cord
  - Shaft
  - Brushes
- Tell that the blender is flipped over and the base is removed.
- Tell to remove the wires that are connected to the button circuit.
- Tell to remove the button circuit.
- Tell to remove the motor circuit of the grinder.
- Tell the participants that reamers are used for squeezing juice from citrus fruits such as grapefruits, lemons, limes, and oranges.
- Tell that some reamers are stationary and require a user to press and turn the fruit.
- Explain that a centrifugal juicer cuts up the fruit or vegetable with a flat cutting blade. It then spins the produce at a high speed to separate the juice from the pulp.
- Explain that a masticating juicer uses a single auger to compact and crush the produce into smaller sections before squeezing out its juice along a static screen while the pulp is expelled through a separate outlet.
- Tell that triturating juicers or Twin Gear juicer has twin augers to crush and press the produce.
- Tell that a juicing press is a larger scale press that can be stationary but also mobile.

- Tell that a mobile press has the advantage that it can travel to a farmer's apple orchard and press juice right there and then.
- Explain that a stovetop steam juice extractor is typically a pot used to generate steam. The steam is used to heat a batch of fruits in a perforated pot stacked on top of a juice collecting container that is above the steam pot.
- Tell about the tools and equipment:
  - Spanner set
  - Line tester
  - Stripper
  - Multimeter
  - Screwdriver
  - Grease
  - Nose pliers
  - Combination pliers
  - Megger
- Tell about jar types:
  - Cap cover
  - S r s ck
  - Lid
  - Jar
  - Seal
  - Blade
  - Dispensing valve
- Explain to the participants that juicers or juice makers are small appliances designed to process citrus fruits into juice.
- Tell that juice extractors are more powerful –and more expensive– than juicers.
- Tell that juicers use a motor and gear assembly to drive a spring-loaded shaft and reamer.
- Tell that the reamer activates an internal switch that starts the motor.
- Tell that the rotating reamer rubs against the fruit, releasing the juice into a container.
- Explain that juice extractors typically use centrifugal force to extract juice through a filter, though some models compress the fruit to force out the juice.
- Activity Handling Strategy, Match the Following:
  - Ask four participants to give the answers, one by one.
  - Answers:
    - C
    - D
    - B
    - A

## UNIT 6.2: Repairing Mixer/Grinder/Juicer

### Unit Objectives

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

- Troubleshoot mixer/grinder problems
- Service/replace the components of mixer/grinder
- Troubleshoot juicer problems
- Repair/Service the juicer

### Ask

- Ask the participants if they know about the troubleshooting of a mixer/grinder and juicer.

### Explain

- Explain to the participants about the troubleshooting of a mixer/grinder/juicer.

### Notes for Facilitation

- Explain the troubleshooting of a mixer/grinder/juicer:

S. No.	Problem	Cause	Solutions
1	The appliance does not work.	There is no electric supply.	Ensure that the plug is proper.
2	The appliance suddenly stops working while in use.	<ol style="list-style-type: none"> <li>1. It is equipped with an 'Overload Protection' (OLP) switch.</li> <li>2. If it over heats it will automatically cut power supply.</li> </ol>	<ol style="list-style-type: none"> <li>1. Unplug and let it cool for 2-3 min.</li> <li>2. Reset by pressing the red colour button at the bottom.</li> <li>3. Put the plug and press the ON switch.</li> </ol>
3	The blade unit is blocked.	The quantity being processed is too large.	Switch off the appliance and remove the ingredient that is blocking the blade.
4	The base unit is giving an unpleasant smell.	This is normal for a few times.	<ol style="list-style-type: none"> <li>1. Clean the jar.</li> <li>2. Ensure that the appliance is assembled correctly.</li> </ol>

S. No.	Problem	Cause	Solutions
5	The appliance makes too much noise.	<ol style="list-style-type: none"> <li>1. The jar lid has not been properly placed.</li> <li>2. The lid is not properly locked.</li> <li>3. The blade is loose.</li> </ol>	<ol style="list-style-type: none"> <li>1. Make sure that the lid is properly locked.</li> <li>2. Tighten the blade.</li> </ol>
6	There are fumes coming from the appliance.	It has been used for too long.	Switch it off and let it cool for 60 min.
7	The blending performance is unsatisfactory.	<ol style="list-style-type: none"> <li>1. There has been an incorrect jar selection.</li> <li>2. There is overload of the ingredient in the jar.</li> </ol>	<ol style="list-style-type: none"> <li>1. Use the correct appliance.</li> <li>2. Cut the ingredients and put it into the jar.</li> <li>3. Put some water and grind.</li> </ol>
8	There is leakage from the jar.	Gasket is not placed properly.	Remove the jar from the base unit and check if the gasket is assembled properly.

Fig 6.2.1: Troubleshooting of mixer/juicer/grinder

- Explain about servicing a switch:
  - Carefully remove the housing around the switch.
  - Check the terminals on the switch.
  - Mark the terminal wires for position and disconnect them.
  - Use a continuity tester or multimeter to determine if the switch is faulty. If it is, replace it and connect the terminal wires.
- Explain about servicing speed controls:
  - Mixer speed is controlled by varying the current to the motor.
  - Larger units use a variable resistor to control the current.
  - Continuity testers or multimeter are useful for checking the operation of either type of speed control.
  - In some cases, contacts can be cleaned to improve the function.
- Explain about servicing the gears:
  - Make sure the appliance is unplugged.
  - Remove the upper housing to expose the gears.
  - Inspect and lubricate the worm gear as well as the pinion gears, making sure that excess lubricant does not touch the motor or any electrical component.
  - Remove any loose shaving or piece in the housing before reassembling.

- Explain about replacing a fuse:
  - Remove the upper housing to gain access to the motor.
  - Find the fuse and disconnect it from the motor.
  - If the fuse is blown it must be replaced with one of the same amperage rating.
- Explain about replacing the motor:
  - Test the motor for continuity.
  - If it fails the test, mark and remove the wires attached to it and disconnect the motor from the housing.
  - Make sure the new motor is an exact replacement in size and rating to ensure that it fits the housing and the task.
- Tell the participants that the problems with a juicer can be from the electric cords, internal wiring, switches or brushes or the motors can fail.
- Tell that the spindle or reamer may be damaged and drive gears may be stripped. Fortunately, many of these things can be fixed.
- Explain how to identify a juicer problem:
  - If the juicer or extractor does not work, first make sure that the power is on at the outlet. Check the electrical cord, look for broken wires or corroded connections and test the motor.
  - If the juicer still doesn't work, the brushes may need replacing.
  - If the motor stops or slows during use, an internal fuse may have burned out.
  - If the motor runs but the reamer does not turn, disassemble the juicer and inspect the spindle and coupling. Replace any broken or cracked parts, if possible; if the reamer is cracked or the portion that fits over the spindle is worn, replace it.
- Tell about tools used for repairing:
  - Screwdrivers
  - Wrenches
  - Sponge
  - Paper towels
  - Silicone lubricant
  - Multimeter
- Explain the steps to repair a juicer:
  - Unplug the power cord.
  - Remove any parts that come off without tools.
  - Remove the base using screwdrivers or wrenches.
  - Remove the electrical cord.
  - Remove screws holding the motor and switch to the housing and carefully remove the motor from the housing.
  - Remove the gears.
  - Inspect, test with a multimeter and replace worn or damaged parts as needed.

- Explain how to service a juicer drive system:
  - Disassemble the juicer.
  - Remove the gears and spindle.
  - Clean and inspect the gears, checking for worn teeth or other components.
  - Replace parts as needed, referring to the owner's manual.
  - Reassemble the unit, applying silicon lubricant to the gear teeth.
- Explain to the participants that the rights and benefits under the warranty are additional to statutory rights, which are not affected by this warranty.
- Tell that no rights are given under the warranty to a person acquiring the product second hand.
- Tell that any repaired or replaced product will be warranted on these terms for the remaining portion of the warranty in the country where the product was purchased.
- Tell that liability for consequential loss or damage is neither accepted nor implied.
- Tell that the following cases are not covered under a product's warranty:
  - If the product was used in any manner other than the intended use.
  - If the product has not been used according to the instruction manual/user's manual, included with the product.
  - If defects are caused by improper or reckless use.
  - If the product was altered or repaired by anyone other than those authorized by the national manufacturer, importer or respective merchant.
  - If there has been use of incorrect current, wrong voltage or faulty electric power supply.
  - If there has been normal wearing and tearing of parts and accessories resulting from regular use.
  - If there are damages resulting from transportation, accidents, mishandling or negligence on the part of the customer.
- Activity Handling Strategy, True or False:
  - Ask four participants to answer, one by one.
  - Answers:
    1. True
    2. True
    3. False
    4. False

## Practical

1. The blade of a mixer/grinder is jammed and is not turning. Perform the steps required to correct the problem.

Solution:

- Keep the mixer grinder jar upside down.
- Pour any lubricant (preferably cooking oil) into the space where the motor coupler is present (keep the level of lubricant below the coupler).
- Keep it aside for a few minutes and then twist the coupler with the help of a plier. Keep the jar upside down with a little oil under the motor coupling to lubricate the jar blades.
- Once the jar blade moves freely, put it on the motor base and run it empty for a few seconds at a time. If the mixer jar blade runs freely.
- Mix only some water and throw it out to clean the jar.

2. Repair dysfunctional motor of a mixer grinder.

Solution:

- Disconnect the power cord from the motor.
- Perform continuity test (the flow of electricity) on the motor:
  - Set the multimeter on the RX1 (resistance times 1) scale to measure resistance.
  - Attach one of the multimeter's probes to the motor's common lead.
  - Attach the other probe to each of the other wires on the motor.
- If it tests faulty, replace the motor with one of the same type, power rating, and size.

3. Perform the following activities.

- The steps for servicing a motor's drive mechanism
- The steps for servicing a motor's gears
- The steps for servicing a motor's fan blades

Solution:

- Service a motor's drive mechanism:
  - Tighten the setscrew attached to the pulley or collar to the shaft.
  - Adjust the drive belt. Replace it in case it is worn or damaged.
  - Check and tighten the shaft. Replace if there is any reduction or worm gears are there on the shaft.
- Service a motor's gears:
  - Disassemble the appliance to access the motor's gears.
  - Remove and inspect gears for any damage or replacement, as needed.
  - Reassemble and test.
- Service a motor's fan blades:
  - Disassemble the appliance to access the motor's fan blade.
  - Remove, inspect, and repair the fan blades. Replace if not repairable.
  - Reassemble and test.

## UNIT 6.3: Safety Rules

### Unit Objectives

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

- Recognize safety measures performed before using a mixer/grinder/juicer
- Practice safety measures while using a mixer/grinder/juicer

### Ask

- Ask the participants if they know about the instructions for placing a mixer/grinder/juicer.
- Ask them if they know about the instructions for operating a mixer/grinder/juicer.

### Explain

- Explain to the participants about the instructions for placing a mixer/grinder/juicer.
- Explain the instructions for operating a mixer/grinder/juicer.

### Notes for Facilitation

- Explain the instructions for placing a mixer/grinder/juicer:
  - Place the appliance on an even platform at a convenient height
  - Ensure that the appliance is at least 6 inches away from the wall
  - Have sufficient space around the appliance
  - Keep away from heat and sunlight
  - Do not use an extension cord
  - Do not use an adapter
  - Do not remove the ground prong
- Explain the instructions for operating a mixer/grinder/juicer:
  - Read all instructions, operating procedures and safety precautions before use
  - Do not put the appliance in water
  - Unplug the appliance when not in use, before cleaning or taking off parts
  - Keep hands, hair and clothing away from moving parts
  - Do not operate if cord or plug is damaged
  - Avoid the usage of appliance when outdoors
  - Do not let the cord hang from the edge of table or counter
  - Ensure that the appliance cover is clamped securely
  - Do not unfasten clamps while the appliance is running
  - Remove wire whip, flat beater or dough hook from the mixer before washing
  - Do not leave the appliance unattended around children.

- Activity Handling Strategy, True or False:
  - Ask four participants to answer one by one.
  - Answers:
    - False
    - True
    - True
    - False



**Skill India**  
कौशल भारत - कुशल भारत



Skilling India in Electronics

# 7. Repairing Microwave Oven

Unit 7.1 - Microwave Oven

Unit 7.2 - Repairing Microwave Oven

Unit 7.3 - Safety Rules



ELE/N3121  
ELE/N3101

## Key Learning Outcomes

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

- Define microwave oven and its types
- Identify different parts of microwave oven
- Discuss customer's requirement
- Demonstrate replacing of water purifier component
- List the safety measure to be followed while repairing

## UNIT 7.1: Microwave Oven

### Unit Objectives

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

- Define microwave oven
- Identify different types of microwave oven
- Identify the parts of microwave oven
- Explain the working of microwave oven
- List advantages and disadvantages of microwave oven

### Ask

- Ask the participants if they know about history of microwave oven.
- Ask them if they know about the different types of microwave oven.
- Ask the participants if they know about the advantages and disadvantages of a microwave oven.

### Explain

- Explain to the participants the history of microwave oven.
- Explain the principles of microwave oven energy.
- Explain the different types of microwave oven.
- Explain about the different parts of a microwave and their functions.
- Explain the advantages and disadvantages of microwave heating/cooking.

### Notes for Facilitation

- Explain to the participants that the use of high-frequency radio waves for heating substances was made possible by the development of vacuum tube radio transmitters around 1920.
- Tell that at the 1933 Chicago World's Fair, Westinghouse demonstrated the cooking of foods between two metal plates attached to a 10 kW, 60 MHz shortwave transmitter.
- Tell that in 1945, the specific heating effect of a high-power microwave beam was accidentally discovered by Percy Spencer.
- Tell that the first food deliberately cooked with Spencer's microwave was popcorn, and the second was an egg.
- Tell that Spencer created a high density electromagnetic field by feeding microwave power from a magnetron into a metal box from which it had no way to escape.
- Tell that on 8th October 1945, Raytheon filed a United States patent application for Spencer's microwave cooking process.

- Tell that the first time the public was able to use a microwave oven was in January 1947.
- Tell that in 1947, Raytheon built the "Radaraange", the first commercially available microwave oven costing about US\$5,000 (\$52,988 in today's dollars) each
- Tell that an early commercial model introduced in 1954 consumed 1.6 kilowatts and sold for US\$2,000 to US\$3,000.
- Tell that they tried to market a large 220-volt wall unit as a home microwave oven in 1955 for a price of US\$1,295.
- Tell that in 1967, they introduced the first popular home model, the countertop Radarange, at a price of US\$495.
- Tell that microwave was formerly found only in large industrial applications. It increasingly became a standard fixture of residential kitchens in developed countries.
- Tell that by 1986, roughly 25% of households in the U.S. owned a microwave oven and later increased to 90% in 1997.
- Tell that in India in 2013, for example, only about 5% of households owned a microwave, which was well behind refrigerators at 31% ownership.
- Explain to the participants that a microwave oven heats food by passing microwave radiation through it.
- Explain that microwaves are a form of non-ionizing electromagnetic radiation with a frequency higher than ordinary radio waves but lower than infrared light.
- Explain that microwave ovens use frequencies in one of the ISM (industrial, scientific, medical) bands.
- Tell that water, fat and other substances in the food absorb energy from the microwaves in a process called dielectric heating.
- Tell that many molecules which are electric dipoles, rotate as they try to align themselves with the alternating electric field of the microwaves.
- Tell that rotating molecules hit other molecules and put them into motion, thus dispersing energy.
- Tell them that compared to liquid water, microwave heating is less efficient on fats and sugars.
- Tell that microwave heating can cause localized thermal runaways in some materials which have low thermal conductivity and dielectric constants that increase with temperature.
- Explain that penetration depth of microwaves is dependent on food composition and the frequency, with lower microwave frequencies penetrating further.
- Explain about Solo Microwave Ovens:
  - The solo models have only a magnetron inside to produce microwaves.
  - It can do the heating and boiling but it cannot perform the roasting and baking operations.
  - The solo models are basic models in microwave ovens.
- Explain about Grill Microwave Ovens:
  - In the grill models, the microwave ovens are provided with heating coils.
  - In the grill function, the heated coils induce a grilling or roasting process.
  - The grilling process creates browning on the surface of the food article.

- Explain about Convection Microwave Ovens:
  - It has the microwave function, the coils for grilling and heaters with a blower to bake the food. These heaters are connected to a thermostat to control the cavity temperature.
- It has the advantage of letting the use of all these functions independently or in combination to suit the cooking needs.
- Explain to the participants that a power supply is an electronic device that supplies electric energy to an electrical load.
- Explain the following terms related to power supply:
  - High Voltage Transformer
  - Capacitor
  - High Voltage Diode
- Explain the following terms related to microwave generation:
  - Magnetron
  - Waveguide
- Explain the following terms related to cooking cavity:
  - Cooking chamber
  - Cavity lamp
  - Turntable motor
- Explain:
  - Analog dial-type timer or a digital control panel
  - Interlocks
  - Blower fan
  - Grill
  - Srrer fan
- Explain to the participants that a microwave oven heats food by passing microwave radiation through it.
- Explain that microwaves are a form of non-ionizing electromagnetic radiation with a frequency higher than ordinary radio waves but lower than infrared light.
- Explain that microwave ovens use frequencies in one of the ISM (industrial, scientific, medical) bands.
- Tell that water, fat and other substances in the food absorb energy from the microwaves in a process called dielectric heating.
- Tell that many molecules which are electric dipoles, rotate as they try to align themselves with the alternating electric field of the microwaves.
- Tell that rotating molecules hit other molecules and put them into motion, thus dispersing energy.
- Tell them that compared to liquid water, microwave heating is less efficient on fats and sugars.
- Tell that microwave heating can cause localized thermal runaways in some materials which have low thermal conductivity and dielectric constants that increase with temperature.

- Explain that penetration depth of microwaves is dependent on food composition and the frequency, with lower microwave frequencies penetrating further.
- Tell the advantages and disadvantages of microwave heating/cooking:

S. No.	Advantages	Disadvantages
1	Cooking time is short	Constraint is there with metal container
2	Destruction of nutrients is less	Heat force control is difficult
3	No physical change of foods	Water evaporation (Dehydration) occurs
4	Melting process is easy	Uneven cooking (hot and cold spots) takes place
5	Sterilization effect exists	Surface toasting is impossible

Fig 7.1.1: Advantages and disadvantages of microwave heating/cooking

- Activity Handling Strategy, Identification Game:
  - Call 3 participants one by one and ask them to answer the questions.
  - Tell others to say whether the answers are right or not.
  - Answers:
    1. Convective
    2. High voltage transformer
- Activity Handling Strategy, Match the Following:
  1. B
  2. D
  3. A
  4. C
  5. E

## UNIT 7.2: Repairing Microwave Oven

### Unit Objectives

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

- Recognize customer's requirement
- Practice repairing and replacing of faulty modules
- Educate customers about do's and don'ts

### Ask

- Ask the participants if they know about fault finding steps.

### Explain

- Explain to the participants about the fault finding steps.
- Explain the flowcharts for finding different faults.
- Explain the component test procedure.

### Notes for Facilitation

- Explain the fault-finding steps with the help of the following table:

S.No.	Problem	Possible cause
1.	The home fuse blows when the power cord is plugged into the wall receptacle.	1. Shorted power cord or wire harness
2.	The monitor fuse blows when the harness power is applied.	1. Shorted power cord or wire harness 2. Secondary interlock or monitor switch
3.	The display does not illuminate when the power cord is plugged in.	1. Shorted or open wiring 2. Monitor switch or monitor 3. Oven temperature fuse 4. Control unit
4.	The display does not operate properly when the STOP/CLEAR button is touched.	1. Primary interlock relay or door sensing switch 2. Control unit 3. Key unit

S.No.	Problem	Possible cause
5.	The oven lamp does not light with shorted or open wiring opened.	<ol style="list-style-type: none"> <li>1. Monitor fuse</li> <li>2. Oven temperature fuse door</li> <li>3. Oven lamp or socket</li> <li>4. Control unit</li> <li>5. Relay (RYI)</li> </ol>
6.	The oven lamp does not light at all.	<ol style="list-style-type: none"> <li>1. Shorted or open wiring</li> <li>2. Oven lamp or socket</li> <li>3. Control unit</li> </ol>
7.	The oven lamp lights, but the fan motor and the turntable motor do not operate.	<ol style="list-style-type: none"> <li>1. Shorted or open wiring</li> <li>2. Cooling fan motor</li> <li>3. Turntable motor</li> </ol>
8.	The oven does not go into cook cycle Shorted or open wiring when START button is touched.	<ol style="list-style-type: none"> <li>1. Primary interlock system</li> <li>2. Monitor fuse</li> <li>3. Magnetron or oven temperature fuse</li> <li>4. Relay (RYI)</li> </ol>
9.	The oven seems to be operating but little or no heat is produced in the oven load.	<ol style="list-style-type: none"> <li>1. Shorted or open wiring</li> <li>2. Magnetron</li> <li>3. Power transformer</li> <li>4. Rectifier assembly</li> <li>5. H.V. capacitor</li> <li>6. Primary interlock system</li> </ol>
10.	The oven goes into a cook cycle but extremely uneven heating is produced in the oven load (food).	<ol style="list-style-type: none"> <li>1. Shorted or open wiring</li> <li>2. Turntable motor</li> <li>3. Low voltage</li> <li>4. Dirty oven cavity</li> <li>5. Wrong operation</li> </ol>
11.	The oven does not cook properly when programmed for Cooking Power.	<ol style="list-style-type: none"> <li>1. Shorted or open wiring</li> <li>2. Control unit</li> </ol>
12.	The oven goes into DEFROST but food is not defrosted well.	<ol style="list-style-type: none"> <li>1. Magnetron</li> <li>2. Wrong operation</li> <li>3. Low voltage</li> <li>4. Dirty oven</li> </ol>
13.	The oven is in the sensor.	<ol style="list-style-type: none"> <li>1. Control Unit</li> <li>2. AH Sensor</li> </ol>

Fig 7.21: Steps for fault-finding

- Start the unit discussion by providing some real-live examples of different faults.
- Using a flow chart, list down the following faults/problems and tell the participants about the remedial steps:
  - Problem 1: Cavity lamp does not light and the oven does not operate
  - Problem 2: The oven does not operate but cavity lamp lights
  - Problem 3: Tell the participants:
    - Oven operates for a few minutes and stops
    - Oven operates and does not stop
    - Output power is too low when cook is selected
    - Output power is high when defrost is selected
  - Problem 4: No microwave oscillation
  - Problem 5: Fuse blows
- Explain the components of test procedure with the help of the following table:

Components	Test procedure	Result
MAGNETRON (Wire leads are removed)	Measure the resistance: Across the filament terminals of the magnetron with an ohm-meter on Rx1 scale	Normal reading: Less than 1ohm Normal reading: Infinite ohms
	Measure the resistance: Between each filament terminal of the magnetron and the chassis ground with an ohm-meter on high test scale	The magnetron checks and all of the high voltage component tests are good, but the unit s ll does not heat a load
HIGH - VOLTAGE TRANSFORMER (Wire leads are removed)	Measure the resistance with an ohm- meter on Rx1 scale: <ul style="list-style-type: none"> <li>a. Primary winding</li> <li>b. Filament winding</li> <li>c. Secondary winding</li> </ul> Measure the resistance with an ohm-meter on highest scale: <ul style="list-style-type: none"> <li>a. Primary winding to ground</li> <li>b. Filament winding to ground</li> </ul>	Normal readings: Approx. 0.3 to 0.5 ohm Less than 0.1 ohm Approx. 65 to 120 ohms Normal readings: Infinite ohms

Components	Test procedure	Result	
HIGH- VOLTAGE CAPACITOR	Measure the resistance: Terminal to terminal	Normal reading: Momentarily indicates several ohms, and then gradually returns to infinite ohms Abnormal reading: Indicates continuity or infinite ohms from the beginning Normal readings: Infinite Abnormal reading: Indicates continuity	
HIGH- VOLTAGE DIODE	Measure the continuity: Forward	Normal readings: Continuity. Abnormal reading: Infinite. Normal readings: Infinite. Abnormal reading: Continuity.	
TOUCHKEY BOARD	Measure the resistance between terminal pins of connector	Resistance value When touched, less than 400 ohms When not touched, more than 1 mega ohm	
RELAY (Control panel/touch key control)	Check for continuity of relay	Power Level	
		0 Level	Infinity Level
		4 sec	18 sec
		6 sec	16 sec
		8 sec	14 sec
		10 sec	12 sec
		12 sec	10 sec
		14 sec	8 sec
		16 sec	6 sec
		18 sec	4 sec
		20 sec	2 sec
22 sec	0 sec		

Fig 7.2.2: Components of test procedure

## Practical

1. Test and replace interlock switches of a microwave oven which is not working properly by using a multimeter and a power probe.

Solution:

- Unplug the oven.
  - Put a multimeter across the AC input before the interlocks.
  - Check that there is no significant change in resistance when the door is opened and closed several times.
  - Check interlock switches and door alignment if the reading approaches zero.
  - Replace with switches having a precisely identical fit.
  - Mark the place where each wire is put while removing the old switch.
  - Check the embossed marking on the old switch.
  - Make sure the new switch aligns correctly with the actuating mechanism.
  - Check for correct electrical operation by using ohmmeter before applying power.
2. Perform microwave leakage test.

Solution:

- Pour  $275 \pm 15$ cc of  $20 \pm 5^\circ\text{C}$  ( $68 \pm 9^\circ\text{F}$ ) water in a beaker which is graduated to 600 cc.
  - Place the beaker on the oven.
  - Set the energy leakage monitor to 2,450 MHz and use it as per the manufacturer's recommended test procedure to assure correct result.
  - When measuring the leakage, use the 2-inch (5cm) spacer supplied with the probe.
  - Operate the oven at its maximum output.
  - Measure the microwave radiation using electromagnetic radiation monitor by holding the probe perpendicular to the surface being measured.
3. Perform interlock continuity test.

Solution:

- PRIMARY INTERLOCK SWITCH TEST
  - Open the door slowly, if an audible click is heard at the same time or at intervals and the latches should activate the switches with an audible click. If the latches do not activate the switches when the door is closed, the switches should be adjusted in accordance with the adjustment procedure.
  - Disconnect the wire lead from the primary switch.
  - Connect the multimeter leads to the common (COM) and normally open (NO) terminal of the switch.

The meter should indicate an open circuit in the door open condition.

When the door is closed, the meter should indicate a closed circuit.

When the primary switch operation is abnormal, make the necessary adjustment or replace the switch with the same type of switch.

- SECONDARY INTERLOCK SWITCH TEST
  - Disconnect the wire lead from the secondary switch.
  - Connect the multimeter leads to the common (COM) and normally open (NO) terminals of the switch.
    - The meter should indicate an open circuit in the door open condition.
    - When the door is closed, the meter should indicate a closed circuit.
    - When the secondary switch operation is abnormal, make the necessary adjustment or replace the switch only with the same type of switch.
- MONITOR SWITCH TEST
  - Disconnect the wire lead from the monitor switch.
  - Connect the multimeter leads to the common (COM) and normally closed (NC) terminals of the switch.
    - The meter should indicate a closed circuit in the door open condition.
    - When the door is closed, the meter should indicate an open circuit.
    - When the monitor switch operation is abnormal, replace with the same type of switch.

## UNIT 7.3: Safety Rules

### Unit Objectives

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

- Recognize safety measure performed before using microwave oven
- Practice safety measure while using microwave oven

### Ask

- Ask the participants if they know about the fault finding steps.

### Explain

- Explain the instructions for operating a microwave oven.
- Explain safe and unsafe cookware for microwave oven cooking.
- Explain general guidelines for operating a microwave oven.

### Notes for Facilitation

- Explain instructions for operating a microwave oven.
  - Read any warning messages, instructions, operating procedures and safety precautions.
  - Do not operate the unit when it is empty.
  - Do not use it for storage.
  - Do not operate if the door does not close.
  - Do not tamper with the safety interlock switches or the fuse.
  - Ensure safety mechanisms are in good working condition.
  - Report if the oven is defective.
  - Do not stand directly against or in front of an oven for long periods.
  - Do not leave food unattended.

- Explain safe and unsafe cookware for microwave oven cooking.

Safe	Unsafe
<ul style="list-style-type: none"> <li>• Containers that are labelled for microwave use</li> </ul>	<ul style="list-style-type: none"> <li>• Containers of the cold storage</li> </ul>
<ul style="list-style-type: none"> <li>• Heatproof glass and Heat-subsector packaging</li> </ul>	<ul style="list-style-type: none"> <li>• Newspapers or brown paper bags</li> </ul>
<ul style="list-style-type: none"> <li>• Glass-ceramic</li> </ul>	<ul style="list-style-type: none"> <li>• Metal pans or containers</li> </ul>
<ul style="list-style-type: none"> <li>• Oven cooking bags</li> </ul>	<ul style="list-style-type: none"> <li>• Foam-insulated cups, bowls, plates or trays</li> </ul>
<ul style="list-style-type: none"> <li>• Baskets for quick warm-ups of rolls or bread</li> </ul>	<ul style="list-style-type: none"> <li>• Chinese "take-out" containers with metal handles</li> </ul>
<ul style="list-style-type: none"> <li>• Wax paper, parchment paper, heavy plastic wrap</li> </ul>	<ul style="list-style-type: none"> <li>• Food wrapped in an aluminum foil</li> </ul>
<ul style="list-style-type: none"> <li>• Paper plates, towels, napkins and bags</li> </ul>	<ul style="list-style-type: none"> <li>• Metal "twistles" on package wrapping</li> </ul>

Fig 7.3.1: Safe and unsafe cookware for microwave cooking

- Explain general guidelines for operating a microwave oven:
  - To prevent fire:
    - Any combustible object should not be placed near a cooking oven.
    - Any utensil with metal ingredients should not be used in a microwave oven.
    - Any operating electric cooking oven should not be left unattended.
  - To avoid glass cracking:
    - Any water splash on the hot viewing glass should be avoided.
  - To avoid explosion:
    - Any uncooked egg (with or without shell) or nut should not be heated in a microwave oven.
    - Any sealed can or bottle of food should not be kept in a microwave oven.
- Activity Handling Strategy, Role Play:
  - Hints
    - Select two candidates from the audience and assign them their roles.
    - Make one of them a technician and one customer.
    - The technician should first tell the colleague about microwave oven's placing:
      - Should be kept at an eye level or below.
      - Should be kept at least at a distance of three feet from any combustible material.
      - Should be kept at a distance from all such objects that block air vents or prevent air circulation.
      - Should be plugged into an outlet directly
    - Then he should tell how to clean the oven appropriately.

- Activity Handling Strategy, Group Discussion:
  - o Ask the participants one by one to tell one safe and one unsafe conditions.

Safe	Unsafe
<ul style="list-style-type: none"> <li>• Containers that are labeled for microwave use</li> <li>• Heatproof glass</li> <li>• Glass-ceramic</li> <li>• Oven cooking bags</li> <li>• Baskets for quick warm-ups of rolls or bread</li> <li>• Paper plates, towels, napkins and bags</li> <li>• Wax paper, parchment paper, heavy plastic wrap</li> </ul>	<ul style="list-style-type: none"> <li>• Containers of the cold storage</li> <li>• Newspapers or brown paper bags</li> <li>• Metal pans or containers</li> <li>• Foam-insulated cups, bowls, plates or trays</li> <li>• Chinese "take-out" containers with metal handles</li> <li>• Metal "twisters" on package wrapping</li> <li>• Food wrapped in an aluminum foil</li> </ul>





**Skill India**  
कौशल भारत - कुशल भारत



Skilling India in Electronics

## 8. Interacting with Co-workers

Unit 8.1 - Interacting with the Supervisor

Unit 8.2 - Interacting with Colleagues

Unit 8.3 - Interacting with Customers



ELE/N3101  
ELE/N9909

## Key Learning Outcomes

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

- List the work requirements
- Maintain interpersonal skills
- Evaluate non-biased feedback
- Recognize different functions
- Describe interpersonal and decision-making skills

## UNIT 8.1: Interacting with the Supervisor

### Unit Objectives

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

- Recognize the work requirements
- Use inter-personal skills to resolve issues
- Communicate with superior and subordinates
- Evaluate non-biased feedback from client regarding task completion

### Ask

- Ask the participants if they can suggest steps that can be taken for work process improvement.
- Ask them if they can define formal and informal processes.
- Ask them if they have experienced any major changes in an existing process.

### Explain

- Explain to the participants that all work processes are designed in a way that they streamline work.

### Notes for Facilitation

- Tell the participants what work requirement is, which needs to be understood:
  - Follow the line of authority.
  - Follow the routine and participate in events, if it is needed.
  - Understand the reporting structure.
  - Follow the institution's code of conduct. An institution's code of conduct is the written set of rules and regulations for all the employees who need to follow it. These rules are to protect the organization's business and at the same time notifies the employees as to what is expected out of them.
  - Keep up to date with new developments. An employee is expected to stay well informed about all the relevant happenings in the organization.
- Explain to the participants about the core concepts which involve achieving targets.
- Discuss with the participants about performance indicators. Explain how it sets performance standards and assesses overall success of an organization. KPI's, as it is commonly known, are meaningful and measurable. What is success? Success is the progress a person makes towards operational or strategic goals like profit margins, customer satisfaction level or zero defect. To succeed, an employee needs to achieve set targets, which must be simple and clear to understand.

- Discuss with the participants about goal setting. Explain how it is important that the goals set for people to achieve must be clear and concise to meet the performance standards.
- Discuss with the participants about motivation and how people can self-motivate themselves. Tell the participants that if there is no motivation, the efficiency and productivity of an employee will never come out.
- Tell the participants about formal and informal business processes.
- Brief the participants that formal processes are the important procedures or stipulated steps that need to be followed, related to financial, safety or legal reasons.
- Give the participants an example of fire safety drill or fire emergency procedure under formal processes.
- Brief the participants that informal processes are the ones which a person creates but may not have the steps written.
- Give the participants an example of carrying out a product research or in-depth communication with users to understand issues under informal processes.
- Explain to the participants that all work processes are designed in a way that they streamline work.
- Tell the participants about the problems that may arise:
  - A person may receive complaints about the quality of a product.
  - Co-workers may get annoyed
  - Chances of work being incomplete
  - There may be an increase in costs
  - Wastage of resources
  - Deadlines can be missed due to bottlenecks
- Explain to the participants the steps for updating and reviewing a particular process.
- Explain the first step of mapping the process. It is essential to explore a phase in detail because there are chances of some processes having sub steps that a person might not be aware of. One must consult people using the process regularly so that no point is missed.
- Discuss the second step of analyzing a process, where a person will have to consider a few questions:
  - If the people working with you are frustrated?
  - What are the steps creating a bottleneck?
  - What are the factors behind the costs going up/down?
  - Which steps require a long time and are a cause of delay?
- Tell the participants about the third step of redesigning a particular process. This process is about eliminating all the issues that a person identified in the previous step. The best strategy is to work with people who are involved and working in the process directly. Such people accept changes easily, especially if they have been in the process from an early stage.
- Explain the fourth step of acquiring resources, which involves changing systems or processes which are in place already. This will also require a person to be aligned with the supervisor and higher authorities of the organisation.

- Discuss the final step of implementation of a new process and communication related to it. Management and planning of the new process is important as rolling it out can be a cumbersome task.
- Tell the participants about the last step of reviewing a process. This step includes testing the process over weeks and months and further, fixing any issues as they come up.
- Activity Handling Strategy, Role play:
  - Hints
    - Select two candidates from the audience, assign them their roles.
    - Make one of them a technician and the other will be angry customer.
    - When the technician is in call with customer, he should speak very politely.
    - When talking to an angry customer, he should let him speak first.
    - Do not interrupt him.
    - When he's done, politely apologise for mistake at your end.
    - Tell him that he will come as soon as possible to look for the issue, if there is problem in the purifier, it will be exchanged with new one.

## UNIT 8.2: Interacting with Colleagues

### Unit Objectives

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

- Explain how to achieve inter-personal communication in an organization
- Identify the different aspects while interacting with a colleague

### Ask

- Ask the participants if they know how to communicate with colleagues.
- Ask them if they can share their experiences of any discords between people.
- Ask them if they know the importance of adherence to time and quality.

### Explain

- Explain how to communicate with colleagues using a role play.

### Notes for Facilitation

- Tell the participants about communication and define communication as a two-way process.
- Explain to the participant that the sender of a message is someone who has a need to communicate with another person, the receiver of the message. This happens in a medium and then reaches the receiver who then responds, based upon the understanding of the message.
- Discuss with the participant how communication is said to be complete when the receiver understands the message in context in which it was meant to be understood.
- Tell the participants that communication includes:
  - Verbal Communication – It mainly consists of the spoken words, such as, you are talking to your team members, talking on phone with the customer and so on.
  - Non-verbal communication – It consists mainly of gestures, facial expressions, movement and so on. You show a thumbs up to say that the projector is now set to use while standing at a distance from the instructor.
  - Written communication – It is the written form of communication such as, reports, analysis, e-mails and so on.

- Explain to the participants about some basic Dos and Don'ts of communication using the following points:

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 an incomplete message.
Communication should be concrete. Mention the specific and actionable things.	Never communicate in an uncourteous way
The message in communication should be coherent or should be related. If something extra has to be mentioned, then mention clearly that it is an addition. Meaning is derived when the entire message is in context.	Refrain from using jargons that the recipient may be unfamiliar with. Do not use complex words or sentences.

Fig 8.2.1: Dos and don'ts of communication

- Explain to the participants that to be able to listen actively and to ensure that they can respond and understand efficiently, they need to:
  - Stop talking to listen to what the other person has to say.
  - Do not jump to a conclusion or respond the moment the other person begins to speak.
  - Try to not be defensive in a conversation, especially when receiving a feedback.
  - Show interest in listening to a person who is speaking through non-verbal cues such as a nod or words such as 'hmm', 'yes' and so on.
  - Ask for details to get the complete information so that nothing is missed out.
- Explain to the participants how 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.
- Mention about the different types of listening to the participants namely – critical listening, empathetic listening, discriminative listening, comprehensive listening and appreciative listening.
- Explain to the participants that the work that is assigned to them will also have certain guidelines which they should follow. It is important to adhere to the targets and guidelines so that there is no conflict between team members and delay.
- Tell the participants that work done should always match to the company delivery standards.

- Make the participants understand that all the members may work together or may work on single projects to fulfil the organizational goals. Therefore, it is important to understand the role of each of the team members and the task being performed by them.
- Tell the participants that as a field technician, a person will have to understand the various tools and equipment which will be required to perform the task because they are answerable to the supervisor for the requirements that are inquired about.
- Explain to the participants that they should keep abreast with new developments and new product models that are in the market. They must ask the management or teachers if they know about these. The person must also read about the latest developments in magazines, journals and on websites.
- Activity Handling Strategy, Role play:
  - Hints
    - Select two candidates from the audience, assign them their roles.
    - Make one of them a technician and other will be colleague.
    - Brief your colleague by first stating what is purifier, then start with its basic working and then brief him about its functioning

## UNIT 8.3: Interacting with Customers

### Unit Objectives

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

- Communicate with customers
- Develop rapport with customers
- Develop interpersonal and decision-making skills

### Ask

- Ask the participants if anyone can tell the dos and don'ts while communicating with a superior.

### Explain

- Explain to the participants how they can have a better relationship with their manager.

### Notes for Facilitation

- Tell the participants about the major responsibilities of a field technician.
- Tell them that they must always interact politely with the customer. The customer's feedback should always be shared with the supervisor.
- Tell the participants that there will be various types of customers whom they will meet. Some may be calm and polite while others may be angry and impatient. However, the technician should always be patient and polite. They should not fight with the customer or reply back in the same rude tone as of the customer.
- Explain to them about SLA by saying that a Service Level Agreement is a formal contract between the service provider and the customer defining services, responsibilities, scope and duties of both the parties.
- Then, tell them about the importance of an SLA.
- Inform them that the field technician should know the line of communication to communicate the customer concerns.
- Further, explain to them the line of communication.
- Then, explain to them about communication skills with the help of the following points:
  - Communication is a skill which is the key to success in today's world. There is ever-increasing importance being given to the ability to communicate and work with others. The nature of work has also changed. It demands faster communication, prompt action and good interpersonal relations. Excellent communication skills are required to climb up the career ladder.

- Communication is the exchange of thoughts, ideas, opinions, suggestions, feedback and so on. For any communication to be complete, it is important to get a feedback or response to whatever is communicated.
- In communication, the sender of a message sends it through a medium. The message reaches the receiver who then replies to the message.
- In addition, also tell them about the different types of communication which are:
  - Verbal Communication – it mainly consists of spoken words.
  - Non-verbal communication – it mainly consists of gestures, facial expressions and hand movements.
  - Written communication – it is mainly a written form of communication such as, reports, analysis and e-mails.
- Further, tell them how to assist and educate customers about warranty and precautions.
- Tell them the importance of building rapport with customers.
- Next, explain to the participants about the importance of personal grooming.
- Tell the participants that they represent the company in front of the customer and therefore, they should take care of personal grooming.
- Explain to the participants about the importance of personal hygiene, for e.g. when they visit the customer their clothes should be neat and tidy. Their hair should be trimmed. They must not smell of sweat as this creates an unhealthy impression in front of the customer.
- Explain to the participants about the importance of following workplace etiquette. Workplace etiquette is the accepted social behaviour when we work along with others in a team. It includes the following norms:
  - Arrive on time for work and show positive enthusiasm at work
  - Behave in a respectful manner with others
  - Maintain yourself and keep the tools in clean and organized condition
  - Never indulge in negative or irrelevant talk
  - Always be eager to learn new things
- Lastly, explain to them about decision making skills.
- Activity Handling Strategy, Role play:
  - Hints:
    - Select two candidates from the audience, assign them their roles.
    - Make one of them a technician and the other will be angry customer.
    - When the technician is in call with customer, he should speak very politely.
    - When talking to an angry customer, he should let him speak first.
    - Do not interrupt him.
    - When he's done, politely apologise for mistake at your end.
    - Tell him to switch off all the sockets.
    - Stay away from the oven unless you arrive at the customer's location.
    - Tell him that he will come as soon as possible to look for the issue, if there is problem in the oven, it will be exchanged with new one.



**Skill India**  
कौशल भारत - कुशल भारत



Skilling India in Electronics

# 9. Employability & Entrepreneurship Skills

Unit 9.1 - Personal Strengths & Value Systems

Unit 9.2 - Digital Literacy: A Recap

Unit 9.3 - Money Matters

Unit 9.4 - Preparing for Employment & Self-Employment

Unit 9.5 - Understanding Entrepreneurship

Unit 9.6 - 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.

Icebreaker

- 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.
4. 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.
5. 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.
6. 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.
7. To break the monotony and boredom during sessions, introduce mini breaks in the form of stretching exercises, jokes, some group songs or games.
8. Invite discussion from the participants.
9. Probe the participants further and lead them to come to affirmative conclusions.
10. Let the participants answer. No answer is incorrect.
11. Ask one participant to write all the points on the whiteboard.
12. Build the sessions from the answers provided by the class.
13. Prepare for the sessions in advance so that the resources like flipcharts, handouts, blank sheets of paper, marker pens, etc. can be kept ready.
14. 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 9.1: Personal Strengths & Value Systems

### Key Learning Outcomes

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

1. Explain the meaning of health
2. List common health issues
3. Discuss steps 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 steps for anger management
29. Discuss the causes of stress
30. Discuss the symptoms of stress
31. Discuss steps for stress management

## UNIT 9.1.1: Health, Habits, Hygiene: What is Health?

### Unit Objectives

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

- Explain the meaning of health
- List common health issues
- Discuss steps to prevent common health issues
- Explain the meaning of hygiene
- Discuss the purpose of Swachh Bharat Abhiyan
- 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 will you as a health representative suggest to the common villagers to prevent common health issues discussed.

- You will need at least 4 volunteers (Narrator, Health Representative, Head of the Village, Doctor).
- Explain the health concerns of the village to the Narrator. The Narrator will brief the class about the skit.
- Give the group of volunteers 5 minutes to do discuss.
- At the end of 5 minutes, ask the group to present the skit to the class assuming them as the villagers.
- The class can ask questions to the group as a common villager.

### Summarize

- Through this activity we got some person 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 they have got.

## Summarize

- Tell them that they need to follow all the steps 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 9.1.2: Safety

### Unit Objectives

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

- Discuss ways to set up a safe work environment
- Discuss critical safety habits to be followed by employees

### Resources to be Used

- Participant Handbook
- Safety signs and symbols
- Safety equipments
- Blank papers
- Pens

### Say

- There are many common safety hazards present in most workplaces at one time or another. They include unsafe conditions that can cause injury, illness and death.
- Safety Hazards include:
  - Spills on floors or tripping hazards, such as blocked aisles or cords running across the floor. Working from heights, including ladders, scaffolds, roofs, or any raised work area.
  - Unguarded machinery and moving machinery parts; guards removed or moving parts that a worker can accidentally touch.
  - Electrical hazards like cords, missing ground pins, improper wiring.
  - Machinery-related hazards (lockout/tag out, boiler safety, forklifts, etc.)

### Team Activity

Safety Hazards

- There are two parts to this activity.
- First part will cover the potential safety hazards at work place.
- Second part will cover a few safety signs, symbols and equipments at work place.
- Use this format for the first part of the activity.

PART 1		
Hazard	What could happen?	How could it be corrected?

**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 steps to design a safe workplace and non-negotiable employee safety habits.

## UNIT 9.1.3: Self-Analysis- Attitude, Achievement Motivation: What is Self-Analysis?

### Unit Objectives

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

- Explain the importance of self-analysis
- Discuss motivation with the help of Maslow's Hierarchy of Needs
- Discuss the meaning of achievement motivation
- List the characteristics of entrepreneurs with achievement motivation
- List the different factors that motivate you
- Discuss the role of attitude in self-analysis
- Discuss how to maintain a positive attitude.
- List your strengths and weaknesses

### Resources to be Used

- Participant Handbook
- Old newspapers
- Blank papers
- Pencils/pens

### Activity

This is a paper pencil activity.

What are the three sentences that describe you the best?
--

What do you need to live happily?
-----------------------------------

What are your strengths and weaknesses?
---

### Do

- Write the three questions on the board/ flipchart before the session begins.
- Give plain papers and pencils/pens to each participant.
- Tell participants to write the answer for the three questions on the paper.
- Tell them the purpose of this activity is not to judge anyone but to understand more about self.

Say 

- Discuss the concept of Self-Analysis and motivation with reference to Maslow's Hierarchy of Needs as discussed in the Participant Handbook.

Team Activity 

Tower building

- Each group 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 9.1.4: Honesty & Work Ethics

### Unit Objectives

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

- Discuss the qualities of honest people
- Describe the importance of honesty in entrepreneurs
- Discuss the elements of a strong work ethic
- Discuss how to foster a good work ethic

### Resources to be Used

- Participant Handbook

### Ask

- What do you understand by honesty?
- Why is it important for entrepreneurs to be honest?
- Do you remember any incident where your honesty helped you in gaining confidence?
- Do you remember any incident where someone lost business due to dishonesty?

### Say

- 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 11:00am but he reached at 11:50am. 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 9.1.5: Creativity and Innovation

### Unit Objectives

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

- List the characteristics of highly creative people
- List the characteristics of highly innovative people

### Resources to be Used

- Participant Handbook
- Chart papers
- Marker pens

### Ask

- You must be aware of the term 'Rags to riches' and heard stories related to the term.
- What do these stories tell us?
- What was so special about these people?

### Say

- Let's have a look at these stories.
- There are some inspiring stories about people which I would like to share with you.
- Narrate these stories to the class.

A.P.J. Abdul Kalam

Who has not heard of A.P.J. Abdul Kalam: Avul Pakir Jainulabdeen Abdul Kalam hailed from a very humble background. His father was a boat owner. To help his family, Kalam would work as a newspaper vendor. With limited resources, he graduated in Physics and studied aerospace engineering. He was instrumental in India's step towards nuclear energy. In 2002, he became the 11th President of India.

Water filter/purifier at source

Two young boys studying in classes 4 and 5, from Lingzya Junior High School, Sikkim designed a simple innovative low cost water purifier.

Inspiration behind the idea: Most people today prefer to use a water filter/purifier at their home. Both the children have given idea to have filter/purifier at the source of water so that everyone has access to clean water without having to make an investment in purchasing a filter/purifier.

Spring's idea is to have a 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 an innovative solar seeder and developed by Subash Chandra Bose, a class 8, student from St Sebasthian 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 9.1.6: Time Management

### Unit Objectives

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

- Discuss the benefits of time management
- List the traits of effective time managers
- Describe effective time management techniques

### Resources to be Used

- Participant Handbook

### Ask

Does this sound like you?

- I can never get enough time to finish what I am doing in a day.
- I have so many things to do that I get confused.
- I want to go for a walk and exercise, but I just do not have the time.
- I had so much to do, so I could not deliver that order on time.
- I would love to start my dream business; but, I just do not have the time.

### Example

- Let's look at these two examples:

Example 1:

Ankita works from home as a freelance writer. She says she can easily put in 8 hours of dedicated work in a day. Because she works from home, she saves money on travel and has a comfortable work routine. But there is a challenge and it is distraction. As she works from home, she can easily just get up and sit down on the sofa to watch TV, wasting valuable time. She may have chores to do, errands to run and bills to pay. She ends up working only two to three hours a day and the result is, her work gets piled up. She is unable to take on more work due to this. Even though her quality of work is appreciated her clients are not very happy about the delay in submission.

Example 2:

Javed has started a successful online selling company from home and makes a good living from his sales. He has set up a small office space in his living room. As both his parents are working full-time, he also has the role of taking care of his two younger siblings. He almost spends half of his day with the younger kids. He does not mind it but it means taking time away from the work. He is still able to manage his online business with these commitments. He wants to spend some more dedicated hours so as to increase his profits. He also wants to look into new business avenues. What should he be doing.

### Ask

- Does this happen with you too?
- Do you find it difficult to prioritize your work?
- Are you able to manage your time effectively?

### Activity

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

### Say

- Time management is not only about how hard you work but also about how smart you work.
- Discuss "What is Time Management" with the participants as given in the Participant Handbook.

### Ask

- Why is it important to manage time? How does it help?
- What happens when you don't manage your time effectively?
- Do you find it difficult to prioritize your work?

### Say

- Discuss the benefits of time management given in the Participant Handbook.
- Let's learn effective time management with the help of an activity.

### Activity

#### Effective Time Management

- This activity has two parts:

#### Part 1 To Do List

- You have to make a to-do list.
- List all of the activities/ tasks that you have to do.
- Try to include everything that takes up your time, however unimportant it may be.
- If they are large tasks, break them into action steps, and write this down with the larger task.
- You can make one list for all your tasks or have separate to-do lists for personal and professional tasks.

PART 2  
URGENT-IMPORTANT GRID

- You have to make a grid as shown on the board here.
- This grid has four boxes. As you can see, each box has a different heading.
- At the heart of the urgent-important grid, are these two questions:
  - Is this task important?
  - Is this task urgent?
- Now, you have to think about each activity that you have written in your to-do list and put it into one of the four categories.
- What do these categories depict?
- Category 1: Urgent/Important
  - This category is for the highest priority tasks. They need to get done now.
- Category 2: Not Urgent/Important
  - This is where you want to spend most of your time.
  - This category allows you to work on something important and have the time to do it properly.
  - This will help you produce high quality work in an efficient manner.
  - The tasks in this category are probably the most neglected ones, but also the most crucial ones for success.
  - The tasks in this category can include strategic thinking, deciding on goals or general direction and planning – all vital parts of running a successful business.
- Category 3: Urgent/Not Important
  - This is where you are busy but not productive. These tasks are often mistaken to be important, when they're most often busywork.
  - Urgent but not important tasks are things that prevent you from achieving your goals.
  - However, some may be activities that other people want you to do.
- Category 4: Not Important and Not Urgent
  - This category doesn't really include tasks, but rather habits that provide comfort, and a refuge from being disciplined and rigorous with your time management.
  - Some may be activities that other people want you to do.
  - These might include unplanned leisure activities as well.

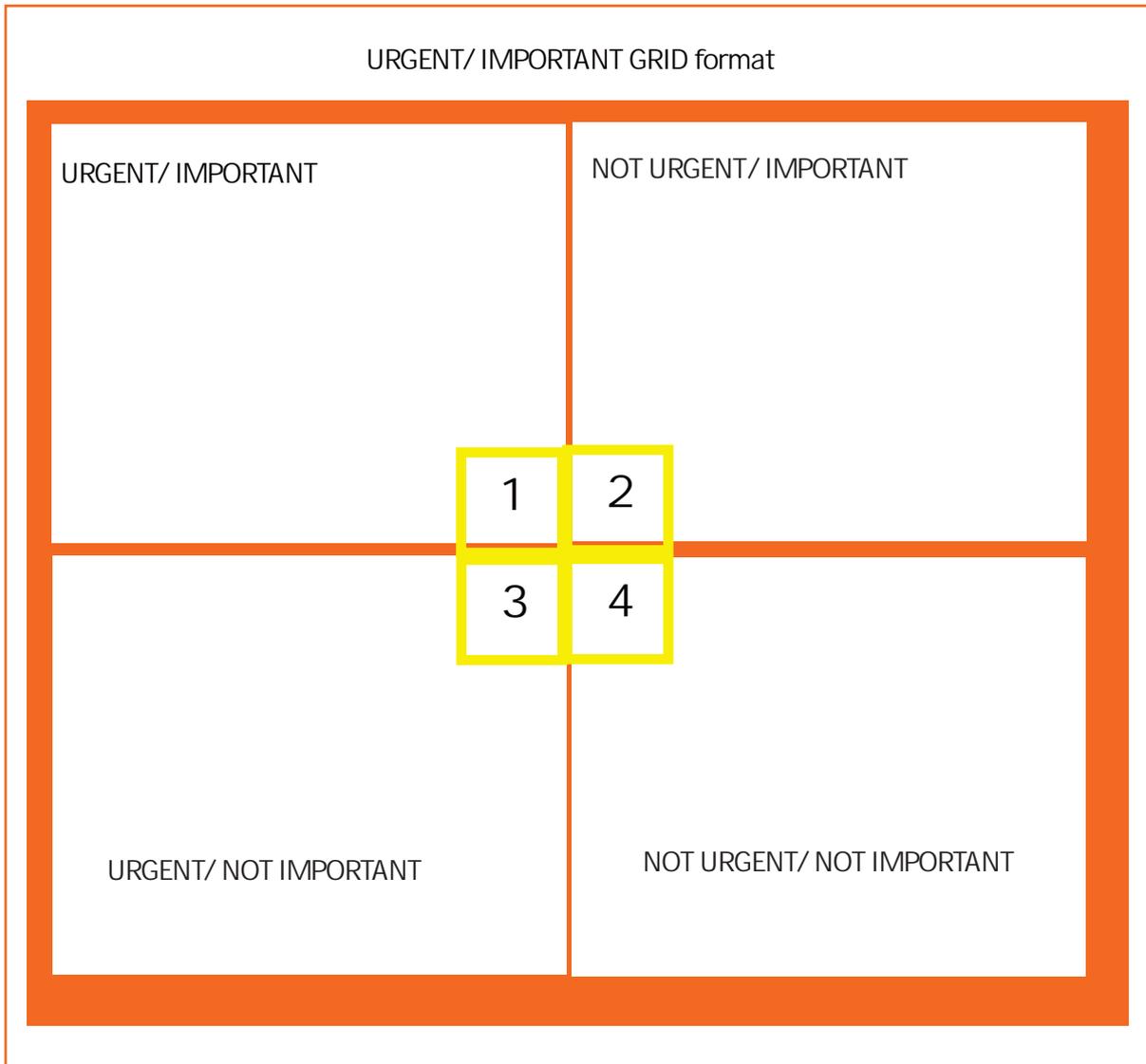
To – Do List Format

1.	
2.	
3.	
4.	
5.	
6.	

7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	

URGENT-IMPORTANT GRID





Do 

- Put down the formats for the to-do list and the urgent/ important grid on the board.
- Instruct the participants to prepare their to-do list first.
- Give the participants 10 minutes to prepare the list.
- Once done, instruct them to divide the tasks in to-do list into the four categories.
- Explain the four categories to the participants giving examples specific to their context.
- As you explain the categories fill the grid with the type of tasks.
- Give the participants 40 minutes to fill the grid.
- Then explain how to balance the tasks between the four categories.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Say 

Activity De-brief:

How can we balance tasks between the four categories? How to manage time through this grid?

- Category 1: Urgent/Important
  - Try to keep as few tasks as possible here, with the aim to eliminate.
  - If you spend too much of your time in this category, you are working solely as a trouble shooter, and never finding time to work on longer-term plans.
- Category 2: Not Urgent/Important
  - Plan these tasks carefully and efficiently as they are most crucial ones for success.
  - If necessary, also plan where you will do these tasks, so that you're free from interruptions.
  - Include strategic thinking, deciding on goals or general direction and planning in your planning process.
- Category 3: Urgent/Not Important
  - Ask yourself whether you can reschedule or delegate them.
  - A common source of such activities is other people. Sometimes it's appropriate to say "no" to people politely, or to encourage them to solve the problem themselves.
- Category 4: Not Important and Not Urgent
  - You also want to minimize the tasks that you have in this category.
  - These activities are just a distraction – avoid them if possible.
  - You can simply ignore or cancel many of them.
  - Politely say "no" to work assigned by others, if you can, and explain why you cannot do it.
  - Schedule your leisure activities carefully so that they don't have an impact on other important tasks.
- Discuss the traits of effective time managers and effective time management techniques as given in the Participant Handbook.

## Summarize

- Discuss the traits of effective time managers and effective time management techniques as given in the Participant Handbook.

## Notes for Facilitation

- Here is a short story. You can conclude the session narrating the story. To make it more interesting you can perform the demonstration described and discuss the short story.
  - One day an expert in time management was speaking to a group of students. As he stood in front of the group, he pulled out a large wide-mouthed glass jar and set it on the table in front of him. Then he took out a bag of about a dozen rocks and placed them, one at a time, into the jar. When the jar was filled to the top and no more rocks would fit inside, he asked, "Is this jar full?" Everyone in the class said, "Yes." Then he said, "Really?"
  - He reached under the table and pulled out a bucket of gravel (small stones). He dumped some gravel in and shook the jar causing pieces of gravel to work themselves down into the space between the rocks. Then he asked the group once more, "Is the jar full?" By this time, the class began to understand. "Probably not," one of them answered. "Good!" he replied.
  - He reached under the table and brought out a bucket of sand. He started dumping the sand in the jar and it went into all of the spaces left between the rocks and the gravel. Once more he asked the question, "Is this jar full?" "No!" the class shouted. Once again he said, "Good." Then he grabbed a jug of water and began to pour it in until the jar was filled to the brim. Then he looked at the class and asked, "What is the point of this illustration?" One student raised his hand and said, "No matter how full your schedule is, if you try really hard you can always fit some more things in it!" "No," the speaker replied, "that's not the point. The truth this illustration teaches us is: If you don't put the big rocks in first, you'll never get them in at all." What are the 'big rocks' in your life? Your children; your loved ones; your education; your dreams; a worthy cause; teaching or mentoring others; doing things that you love; time for yourself; your health; your mate (or significant other). Remember to put these BIG ROCKS in first or you'll never get them in at all. If you sweat about the little stuff (the gravel, sand, and water) then you'll fill your life with little things you worry about that don't really matter, and you'll never have the time you need to spend on the big, important stuff (the big rocks).
- End the story with these lines...  
So, tonight, or in the morning tomorrow, when you are reflecting on this short story, ask yourself this question: What are the 'big rocks' in my life? Then, put those in your jar first.

## UNIT 9.1.7: Anger Management

### Unit Objectives

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

- Discuss the importance of anger management
- Describe anger management strategies
- Discuss steps 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 9.1.8: Stress Management: What is stress?

### Unit Objectives

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

- Discuss the causes of stress
- Discuss the symptoms of stress
- Discuss tips for stress management

### Resources to be Used

- Participant Handbook

### Ask

- You are waiting in the reception for an interview or a very important meeting, suddenly your legs are shaky, your hands are cold, you are feeling nervous. Have you ever been in this kind of situation?
- Have you had days when you had trouble sleeping?
- Have you ever been so worried about something that you ended up with a terrible headache?

### Say

- You've probably heard people say, "I'm really stressed out" or "This is making me totally stressed."

### Ask

- What do you understand by stress?
- What gives you stress?
- How do you feel when you are stressed or what are the symptoms of stress?
- How can stress harm you?
- Why is it important for entrepreneurs to manage stress?

### Say

- When we feel overloaded or unsure of our ability to deal with certain challenges, we feel stressed.
- Discuss about stress, causes of stress, and symptoms of stress as discussed in the Participant Handbook.

- Let's understand the causes of stress and how to deal with them with the help of some case scenarios.
- You will be given some cases.
- You have to analyse the case scenario and then find an appropriate solution to the problem.
- This will be a group activity.

## Do

- Divide the class into four groups of 5- 6 participants (depending on the batch size).
- Assign one case scenario to each group.
- Instruct them to read the case carefully.
- The group is expected to analyse and discuss the case amongst them and find a solution to the given problem.
- Explain their discussion should result in getting answers for the following questions:
  - What was/were the cause(s) of stress?
  - Was the stress avoidable or manageable under the given circumstances?
  - If yes, how do you think that the stress could be avoided (managed)?
  - If no, then why not?
- Give the class 10-12 minutes to discuss the case and note down their solutions.
- At the end of 12 minutes, the team should present their case solution to the larger group.
- Ask the group to select a group leader for their group.
- The group leader to discuss and assign roles to the group members for the presentation.

## Team Activity

### Case Study Analysis

#### Scenario 1

Akash's alarm doesn't go off and he gets late getting out of the house. He hits traffic and ends up 15 minutes late to work, which his boss notices. He gets to his desk and finds he has to complete 2 reports in next one hour. Just when he is about to begin work, a message pops up "Telecon with the client begins in 10 minutes. Please be in the conference room in 5 minutes." He is not prepared for the call. He is stressed. He does not want to speak to his boss about this. He is stressed, feeling uncomfortable and sick. Not in a position to attend the call or finish the reports on time.

## Scenario 2

While paying his overdue bills, Rahul realised that it's the middle of the month and he has only Rs 500 left in his account. He has already asked all of his friends, and family for loans, which he hasn't paid back yet. He is still contemplating over the issue when his phone rings. His sister's birthday is due next week and she has seen a beautiful dress which she wants to buy but cannot tell the parents as it is a bit expensive. She wishes if Rahul could buy the dress for her. Rahul has promised to buy her the dress for her birthday.

Rahul is stressed, does not understand what to do. He is unable to concentrate on his work and unable to complete the tasks assigned. His team leader has already warned him of the delay.

## Scenario 3

Sheela calls the cable company as she has unknown charges on her bill. She has to go through the automated voice mail menu three times and still can't get through to a customer care executive. After 15 minutes of repeated efforts, her call is answered. She explains the entire issue to the customer care executive but before the person could suggest a way out, the call drops.

Now Sheela has to call back and repeat the whole process all over again with a new customer care executive. She is very angry and calls again but cannot connect this time.

She has to leave to office so she decides to call from office and check. When she connects this time, she is angry and argues with the executive on the call. All her co-workers around are looking at her as her volume has suddenly increased. She bangs the phone and ends the call.

Her co-worker Neelam enquires what has happened to her. She ignores her and just walks off. She has become irritable and her behaviour and tone with other co-workers is not acceptable.

## Scenario 4

Arpit is a young entrepreneur who started doing business through Facebook few weeks back. He had always been into a job. Although Arpit has very few financial liabilities, it wasn't an easy decision to leave a comfortable job at once and look for newer pastures. Arpit's boss warned him of the consequences and the challenges of starting a business when nobody ever in his family had been in business.

He has not been able to get a good deal till now. This is an important life shift for him which comes with unknown variables. Arpit is nervous and is wondering if he has what it takes to fulfill the requirement of his new role, or the new experiences he's likely to face.

Ask 

De-brief questions:

- What was/ were the cause(s) of stress?
- Was the stress avoidable or manageable under the given circumstances?
- If yes, how do you think that the stress could be avoided (managed)?
- If no, then why not?

Say 

- Now, let's discuss the problem and solution with the larger group.
- The group will first briefly describe the case to the class.
- Then discuss the issue identified and the proposed solution.
- Post presentation, the other groups may ask questions to the group that has presented.

Do 

- Congratulate each group for sharing their points.
- Ask the audience to applaud for them.
- Ask de-brief questions to cull out the information from each group.
- Keep a check on time. Tell participants to wind up the discussion quickly if they go beyond the given time limit.

Say 

- While it is common and normal to feel some tension. This feeling nervous and tensed can interfere with your thinking process and can have a negative impact on your performance.
- Stress can deplete the most vibrant of souls. It can have a negative effect on every aspect of a person's life including their health, emotional well-being, relationships, and career. However, one needs to understand the causes and types of stress before looking for ways to manage it.

De-brief:

Scenario 1

The cause of stress was lack of time management and the habit of procrastinating. If Akash would have managed his time well, planned alternate ways to get up on time, finished prior tasks on time and planned for client meetings in advance then he wouldn't have faced stress.

Scenario 2

The cause of stress was lack of financial planning. Rahul should have planned his financial resources well in advance and saved some money for the rainy day. Also, differentiating between needs and wants and keeping a check on non-essential expenditure would have saved Rahul from this situation.

### Scenario 3

Some times, 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 9.2: Digital Literacy: A Recap

### Key Learning Outcomes

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

1. Identify the basic parts of a computer
2. Identify the basic parts of a keyboard
3. Recall basic computer terminology
4. Recall the functions of basic computer keys
5. Discuss the main applications of MS Office
6. Discuss the benefits of Microsoft Outlook
7. Identify different types of e-commerce
8. List the benefits of e-commerce for retailers and customers
9. Discuss Digital India campaign will help boost e-commerce in India
10. Describe how you will sell a product or service on an e-commerce platform

## UNIT 9.2.1: Computer and Internet Basics: Basic Parts of a Computer

### Unit Objectives

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

- Identify the basic parts of a computer
- Identify the basic parts of a keyboard
- Recall basic computer terminology
- Recall the functions of basic computer keys

### Resources to be Used

- Participant Handbook
- Computer Systems with the required applications

### Say

- Let's take a quick recap of the basic computer parts.
- Discuss 'Basic Parts of Computer' and 'Basic Parts of a Keyboard' with the class as given in the Participant Handbook.

### Explain

- Explain all the parts of the computer and the keyboard by demonstrating on the real system.

### Ask

- Do you know about internet?
- Have you ever used internet?
- Why do you think internet is useful?
- What was the last task you performed on internet?

### Say

- Let's look at some basic internet terms.
- Discuss 'Basic Internet Terms' with the participants as given in the Participant Handbook.

## Summarize

- Ask the participants what they have learnt from this exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the importance of computer and internet for entrepreneurs.

## Practical

- Conduct a practical session.
- Ask the participants to assemble in the computer lab.
- Give some hands-on practical 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 9.2.2: MS Office and Email: About MS Office

### Unit Objectives

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

- Discuss the main applications of MS Office
- Discuss the benefits of Microsoft Outlook

### Resources to be Used

- Participant Handbook
- Computer Systems with 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 a attachment in an email.
- Demonstrate how to use other MS Office applications.

**Practical** 

- Give some hands-on practical 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 9.2.3: E-Commerce

### Unit Objectives

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

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

### Resources to be Used

- Computer 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 go 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

- Demonstrate how e-commerce 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 e-commerce. 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 e-commerce 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 9.3: Money Matters

### Key Learning Outcomes

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

1. Discuss the importance of saving money
2. Discuss the benefits of saving money
3. Discuss the main types of bank accounts
4. Describe the process of opening a bank account
5. Differentiate between fixed and variable costs
6. Describe the main types of investment options
7. Describe the different types of insurance products
8. Describe the different types of taxes
9. Discuss the uses of online banking
10. Discuss the main types of electronic funds transfer

## UNIT 9.3.1: Personal Finance – Why to Save?

### Unit Objectives

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

- Discuss the importance of saving money
- Discuss the benefits of saving money

### Resources to be Used

- Participant Handbook

### Ask

- How many of you save money?
- Why do you feel the need to save it?
- Do you plan your savings?
- Where do you keep the money you save?
- How do you use the money that you have saved?

### Example

- Let's look at these two examples:

#### Example 1:

Suhani works in a good company and earns Rs. 30,000 month. She always saves 5000 per month and keeps it aside as a personal saving. She keeps the money at home and has saved quite a lot. One day her mother has a medical emergency and has to be taken to the hospital. Her family is worried about the amount they have to spend for the treatment. It will cost them atleast 40,000.

Suhani says tells her family not to worry and that she has about 50,000, which she has saved over the months.

#### Example 2:

Jasmeet works in the same company and earns the same as Suhani. She is very fond of shopping and spends most of her money on buying new clothes. At the end of the month, she is always asking her father for money as her pay is finished.

### Ask

- Who do you identify with –Suhani or Jasmeet?
- How do you think Suhani manages to save money which Jasmeet is unable to do?

Say 

- We should always set aside some and save some money from our monthly pay. The future is unpredictable. Saving money not only gives you a sense of financial security but it can be used in case of emergencies.
- Discuss "Importance of Saving" with the participants as given in the Participant Handbook.

Ask 

- What are the benefits of saving money?
- What does being financially independent mean to you?

Say 

- Discuss "Benefits of Saving" with the participants as given in the Participant Handbook.
- Now let us continue with Suhani's story. Suhani has told her family not to worry and that she has about 50,000, which she has saved over the months. The family is happy about Suhani's decision of saving money, which will be of great help for them now. Suhani is going to the hospital today to pay the first instalment for the treatment. Suddenly finds only 35,000 in her cash box when she counts and does not remember using it. She has not kept any record and now she is upset.

Ask 

- Was it a good decision by Suhani to save a part of her earnings every month?
- Was it a wise decision to keep all her savings as cash in a cash box?
- Could she have managed to save money in a better and more effective manner?
- Do you want to learn how to save money and use it effectively?

Say 

- Let's learn personal saving with the help of a group activity.

## Team Activity

Personal Finance- Why to save

- This activity has two parts:

### PART 1

#### WAYS TO SAVE MONEY

- You are earning 30,000/- per month. You have recently changed your job and have to move to a metropolitan city. You are now living as a paying guest paying 10,000/- per month. Your other estimated expenditures like travel, food, recreation would be around Rs. 17,000 per month.
- Make a list of different ways to save money.

### PART 2

#### HOW WILL YOU USE THE MONEY?

- After a year how much have you been able to save?
- How will you use the money that you have saved?

## Do

- Divide the class into groups of four.
- Instruct the participants to think and prepare a list of the various ways they can save money.
- Give the participants 10 minutes to prepare the list.
- Once done, instruct them to think of how they could use the money they have saved.
- Give the participants 10 minutes to prepare the list.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Activity De-brief

- What were the different ways you could save money?
- How much money were you able to save?
- How will you use the money you have saved in one year?

## Say

- Discuss the importance of personal finance and why it is important to save money.

## Summarize

You can summarize the session by discussing:

- The importance of saving money.
- Ways to save money.
- How the money saved can be used for different purposes.

## UNIT 9.3.2: Types of Bank Accounts, Opening a Bank Account

### Unit Objectives

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

- Discuss the main types of bank accounts
- Describe the process of opening a bank account

### Resources to be Used

- Account opening sample forms
- Participant Handbook

### Ask

- How many of you save money?
- Where do you keep the money you save?
- How many of you have a bank account?
- What type of account do you have?

### Example

- Let's look at the given example:

Reena is in the third year of college but in the evening, she gives tuition 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.

<b>Photograph</b>	<b>XXX Bank</b>		
<b>SAVING BANK ACCOUNT OPENING FORM</b>			
Account No.: _____		Date: _____	
Name of the Branch			
Village/Town			
Sub District / Block			
District			
State			
SSA Code / Ward No.			
Village Code / Town Code	Name of Village / Town		
Applicant Details:			
Full Name	Mr./Mrs./Ms.	First	Middle Last Name
Marital Status			
Name of Father			
Name of Mother			
Address			
Pin Code			
Tel No. Mobile			Date of Birth
Aadhaar No.			Pan No.
MNREGA Job Card No.			
Occupation/Profession			
Annual Income			
No. of Dependents			

<b>Detail of Assets</b>	Owning House <input type="checkbox"/> Y/N	Owning Farm <input type="checkbox"/>		
	Y/N			
	No. of Animals <input type="checkbox"/>	Any other <input type="checkbox"/>		
<b>Existing Bank A/c. of family members / household</b>	Y / N	If yes, No. of A/cs. _____		
<b>Kisan Credit Card</b>	Whether Eligible	Y / N		
I request you to issue me a <b>Rupay Card</b> .				
I also understand that I am eligible for an Overdraft after satisfactory operation of my account after 6 months of opening my account for meeting my emergency/ family needs subject to the condition that only one member from the household will be eligible for overdraft facility. I shall abide by the terms and conditions stipulated by the Bank in this regard.				
<b>Declaration:</b>				
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.				
<b>Place:</b>				
<b>Date:</b>		<b>Signature / LTI of Applicant</b>		
<b>Nomination:</b>				
<b>I want to nominate as under</b>				
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.
<b>Place:</b>				
<b>Date:</b>				<b>Signature / LTI of Applicant</b>
<b>Witness(es)*</b>				
1. _____				
2. _____				
*Witness is requires only for thumb impression and not for signature				

## UNIT 9.3.3: Costs: Fixed vs. Variables: What are Fixed and Variable Costs?

### Unit Objectives

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

- Differentiate between fixed and variable costs

### Resources to be Used

- Participant Handbook
- Blank sheets of paper
- Pens

### Ask

- What is cost?
- Will a telephone bill fall under the category of a fixed or variable cost?

### Say

- Discuss: Fixed and Variable cost with examples. Let us do a small activity.

### Team Activity

Identify the type of cost

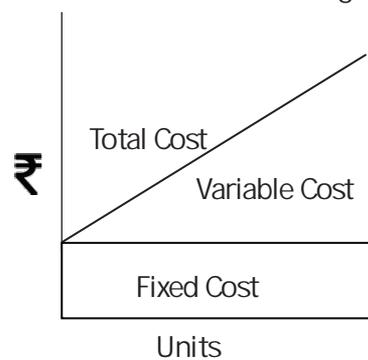
1. Rent
2. Telephone bill
3. Electricity bill
4. Machinery
5. Insurance
6. Office supplies/Raw materials
7. Employee salaries
8. Commission percentage given to salesperson for every unit sold
9. Credit card fees
10. Vendor bills

## 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 9.3.4: Investments, Insurance and Taxes

### Unit Objectives

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

- Describe the main types of investment options
- Describe the different types of insurance products
- Describe the different types of taxes

### Resources to be Used

- Participant Handbook

### Ask

- Ask the participants- "What do you see first thing in when you get your mobile bill? Apart from the amount and due date do you have a look at the taxes you are being billed for?"
- Why do you think people get their cars insured or have a medical insurance?
- You have saved money and want to invest it; how would you decide what is the best investment for your money?

### Example

- Let's have a look at a few scenarios.

Ranbir has sold his house and deposited the money in his bank. His Chartered Accountant tells him that he will have to re-invest the money otherwise he will have to pay capital tax. What is capital tax and how is it different from income tax?

Jasmeet and Anup are blessed with a baby girl. They decide to have an insurance policy that will mature when their daughter is ready for 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 questions

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 type 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 9.3.5: Online Banking, NEFT, RTGS, etc.

### Unit Objectives

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

- Discuss the uses of online banking
- Discuss the main types of electronic funds transfer

### Resources to be Used

- Participant Handbook
- Computer System with internet connection
- Debit card

### Ask

- When was the last time you visited a bank?
- How do you pay your bill for electricity and telephone?
- Have you ever tried to transfer money from one bank account to another bank account using the online banking facility?

### Say

- Most of us lead a busy life. Time has become more important than money. In this busy schedule, no one has time to stand in bank queues. That's where Online Banking comes in. Online banking or internet banking means accessing your bank account and carrying out financial transactions through the internet.
- Discuss "What is online banking?" from the Participant Handbook.
- There are various advantages of online banking:
  - It saves time, as you need to visit the branch.
  - You can conduct your banking transactions safely and securely without leaving the comfort of your home.
  - Online Banking also gives you round the clock access.
  - Online Banking makes it possible for you to pay your bills electronically.

**Do** 

- Show them how they can use the internet banking.
- Use the computer system and show the demo videos on how to use internet banking provided on most banking sites. the computer system.
- Tell the class the various features of online banking:
  - Through their website set-up your online account.
  - Choose a secure username and password.
  - Set-up your contact information.
  - Once your information is verified, you are good to go.
  - Once you enter the portal explore all the features and learn your way through the portal.

**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 9.4: Preparing for Employment & Self-Employment

### Key Learning Outcomes

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

1. Discuss the steps to follow to prepare for an interview
2. Discuss the steps to create an effective Resume
3. Discuss the most frequently asked interview questions
4. Discuss how to answer the most frequently asked interview questions
5. Identify basic workplace terminology

## UNIT 9.4.1: Interview Preparation: How to Prepare for an Interview?

### Unit Objectives

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

- Discuss the steps to follow to prepare for an interview

### Resources to be Used

- Participant Handbook

### Ask

- Have you ever attended an interview?
- How did you prepare before going for an interview?

### Say

- An interview is a conversation between two or more people (the interviewer(s) and interviewee) where questions are asked by the interviewer to obtain information from the interviewee.
- It provides the employer with an opportunity to gather sufficient information about a candidate and help them select the ideal candidate.
- It also provides the interviewee with an opportunity to present their true potential to the employer, build confidence and help make a decision about the job by asking questions regarding design, 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 pants, 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 9.4.2: Preparing an Effective Resume: How to Create an Effective Resume?

### Unit Objectives

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

- 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/a 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 position 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 position. Create a resume for the candidate to apply for the job position.
- 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 workforce. 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 a 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 9.4.3: Interview FAQs

### Unit Objectives

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

- Discuss the most frequently asked interview questions
- Discuss how to answer the most frequently asked interview questions

### Resources to be Used

- Participant Handbook

### Say

- Tell the participants you will provide them with interview situations 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 allowed 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 shows 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 questions.

## 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 allowed 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 9.4.4: Work Readiness – Terms and Terminology

### Unit Objectives

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

- Identify basic workplace terminology

### Resources to be Used

- Participant Handbook
- Chart papers
- Blank sheets of paper
- Pens

### Ask

- What do you understand by workplace terminology?
- Are offer letter and contract of employment the same?

### Say

- Let's start this unit with an activity.

### Team Activity

Workplace terminology

- This is a group activity conducted in three parts.

#### Part 1

Sheila received a call from the recruiter of MND Company. Before she is recruited by the company, think of the recruitment process she will have to go through. Start from the telephone call to signing her letter of acceptance. Write down all the words that come to your mind.

Activity De-brief

- Have the participants read out the words they have written
- Encourage all the participants to participate in the activity

Do 

- Divide the class into small groups of 4 or 6.
- Instruct the participants that they will be doing a brainstorming activity.
- Give them one chart paper each. Tell them to divide the chart in two parts.
- Instruct them that they have to use one half of the chart paper now. The other half will be used later.
- The participants have to write all the words that come to their mind related to the recruitment process.
- Give them 10 minutes to do the activity.
- Tell them that there are no right or wrong answers.
- Keep a track of the time.

Say 

- You all know quite a few words related to the terms used in the office.
- Let us talk about some new terms that have been missed out.
- Discuss “Work Readiness – Terms and Terminology” with the participants as given in the Participant Handbook.

Ask 

- Why is it important to know the workplace terms?
- How do they help?
- Can the words be categorised further?

Say 

- Let's now continue the activity.

Team Activity 

Terms and Terminology

- This is again a group activity. The members of the group remain the same as in Activity 1.

Part 2

- With the help of the new terms you have learned, make a flowchart of the hiring process of MND Company.

Activity De-brief

- Ask the groups to share the flowcharts and the new terms they added while preparing the flowchart.

**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, compensation, 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 9.5: Understanding Entrepreneurship

### Key Learning Outcomes

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

1. Discuss the concept of entrepreneurship
2. Discuss the importance of entrepreneurship
3. Describe the characteristics of an entrepreneur
4. Describe the different types of enterprises
5. List the qualities of an effective leader
6. Discuss the benefits of effective leadership
7. List the traits of an effective team
8. Discuss the importance of listening effectively
9. Discuss how to listen effectively
10. Discuss the importance of speaking effectively
11. Discuss how to speak effectively
12. Discuss how to solve problems
13. List important problem-solving traits
14. Discuss ways to assess problem solving skills
15. Discuss the importance of negotiation
16. Discuss how to negotiate
17. Discuss how to identify new business opportunities
18. Discuss how to identify business opportunities within your business
19. Explain the meaning of entrepreneur
20. Describe the different types of entrepreneurs
21. List the characteristics of entrepreneurs
22. Recall entrepreneur success stories
23. Discuss the entrepreneurial process
24. Describe the entrepreneurship ecosystem
25. Discuss the purpose of the Make in India campaign
26. Discuss key schemes to promote entrepreneurs
27. Discuss the relationship between entrepreneurship and risk appetite
28. Discuss the relationship between entrepreneurship and resilience
29. Describe the characteristics of a resilient entrepreneur
30. Discuss how to deal with failure

## UNIT 9.5.1: Concept Introduction (Characteristics of an Entrepreneur, types of firms/ types of enterprises)

### Unit Objectives

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

- Discuss the concept of entrepreneurship
- Discuss the importance of entrepreneurship
- Discuss the characteristics of an entrepreneur
- Describe the different types of enterprises

### Resources to be Used

- Participant Handbook

### Say

- Let's start this session with some interesting questions about Indian entrepreneurs.

### Team Activity

Quiz Questions

1. Who is the founder of Reliance Industries?  
Dhirubhai Ambani
2. Who is the Chairman of Wipro Limited?  
Azim Premji
3. Who launched e-commerce website Flipkart?  
Sachin Bansal and Binny Bansal
4. Who is the founder of Paytm?  
Vijay Shekhar Sharma
5. Who is CEO of OLA Cabs?  
Bhavish Aggarwal
6. Who is the founder of Jugnoo?  
Samar Singla (autorickshaw aggregator)
7. Who is the founder of OYO Rooms?  
Bhavish Aggarwal

Do 

- Tell them that you will ask them few questions about a few entrepreneurs.
- Divide the class in to two groups.
- In turns ask the quiz questions to the groups.
- If the answer is incorrect pass the question to the other group.
- Share the answer if the groups are not able to answer.
- Congratulate the participants who answered correctly.

Ask 

- What do you understand by entrepreneurs?
- What is the importance of entrepreneurship in today's scenario?
- What do you think are the characteristics of successful entrepreneurs?
- What are different types of enterprises that an entrepreneur in India can own and run?

Say 

- Talk about entrepreneurs, importance of entrepreneurship, characteristics of successful entrepreneurs, and different types of enterprises in India as discussed in the Participant Handbook.
- Tell the participants, stories of successful Indian entrepreneurs - their struggles, the moments of heartbreak, the perseverance and triumph.
- Ask them if they know of any such entrepreneur.

Summarize 

- Close the discussion by summarizing about the opportunities for entrepreneurs in India.

Notes for Facilitation 

- Check out different Government schemes for small entrepreneurs. Share the information with the participants.
- You can tell them about the government websites like Start Up India, [mudra.org.in](http://mudra.org.in) etc.
- Discuss about various schemes and policies by the Government of India for entrepreneurs.

## UNIT 9.5.2: Leadership and Teamwork

### Unit Objectives

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

- List the qualities of an effective leader
- Discuss the benefits of effective leadership
- List the traits of an effective team

### Resources to be Used

- Participant Handbook
- Blank sheets of paper
- Pens

### Do

- Show the picture given below to the class.
- Ask them to quickly write on a piece of paper what comes to their mind after seeing the picture.
- Now ask them, "What do you understand from this picture?"
- Encourage participants to share their thoughts.

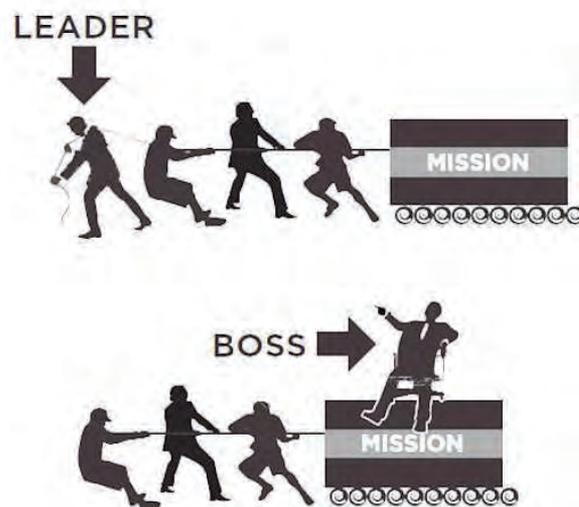


Fig 9.5.1: Sharing thoughts

Say 

- This picture depicts the qualities of a leader and the difference between a leader and a boss.
- A boss focuses on structure and inspires fear whereas a leader follows vision and generates enthusiasm.
- A boss blames employee for the breakdown whereas a leader fixes breakdown.
- 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 9.5.3: Communication Skills: Listening & Speaking: The Importance of Listening Effectively

### Unit Objectives

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

- Discuss the importance of listening effectively
- Discuss how to listen effectively
- Discuss the importance of speaking effectively
- Discuss how to speak effectively

### Resources to be Used

- Participant Handbook

### Activity

Activity – Chinese Whisper

Step 1: Form a circle.

Step 2: Start a whisper chain. Any one participant will whisper a message into his/her neighbour's ear. No one else must hear the message. The message can be serious or downright silly.

Step 3: The next person who first heard the message should whisper the message very quickly to the person sitting next to them.

Step 4: The game goes on until the last person says whatever they heard out loud and the first person reveals the real message.

Compare them and have a great laugh!

### Ask

De-brief questions:

- Was the original message the same as the message that is communicated at the end of the game?
- Why do you think there was a difference in the messages?

### Say

- No, the original message was not same at the end of game.
- The barriers to communication like language, disturbance and noise, poor listening skills, boredom, poor speaking skills, etc. are the potential reasons this happens.

- There are various aspects to communication. Speaking skills and listening skills are two major components to any communication. There is always some room for improvement in the way we communicate.
- It is important to accept the reality of miscommunication and work to minimise its negative impacts.

### Say

- Communication is a two-way process where people exchange information or express their thoughts and feelings
- It involves effective speaking and effective listening.
- If I go to the store to get bread, I exchange money for the bread. I give something and get something in return.
- Communication takes place in the same manner. You have to provide and receive information for communication to take place.

### Ask

- How often do you hear these statements?
  - "You're not listening to me!"
  - "Why don't you let me finish what I'm saying?"
  - "You just don't understand!"
- What do you think the other person is trying to convey to you through these sentences?
- We will not talk about the importance of listening effectively as discussed in the Participant Handbook.

### Say

- Let's play a game to understand effective listening process better.

### Do

- This is a class activity.
- The participants need to answer the questions they hear.
- Instruct them to listen carefully.
- You will read it at a stretch and if need be repeat it once more.
- Tell the participants to raise their hand if they know the answer to the question asked.
- Keep a check on me.

## 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 questions:

- 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 lobby 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 have 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 show 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 9.5.4: Problem Solving & Negotiation Skills

### Unit Objectives

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

- Discuss how to solve problems
- List the important problem-solving traits
- Discuss ways to assess problem solving skills
- Discuss the importance of negotiation
- Discuss how to negotiate

### Resources to be Used

- Participant Handbook

### Ask

- What is a 'problem'?
- What do you think are the problems you may face in the process of becoming a successful entrepreneur?

### Say

- Discuss the definition of problem as given in the Participant Handbook.
- In a hurdle race the hurdles are the obstacles on the way to reach your goal.
- Similarly, obstacles are the hurdles you may face while reaching your goal i.e. to set-up your own business.
- Your goal will be to reach the finishing line after crossing these hurdles.

### Ask

- What do you do when you face a problem?
- How do you resolve it? You can pick examples from the questions 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 interviewing a few also reached 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 at least 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 Aggarbais. Your staff members do door to door selling and organise marketing campaigns in local markets. Your brand has established its 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 aggarbais 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 9.5.5: Business Opportunity Identification on: Entrepreneurs and Opportunities

### Unit Objectives

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

- Discuss how to identify new business opportunities
- Discuss how to identify business opportunities within their business

### Resources to be Used

- Participant Handbook
- Blank sheets of paper
- Pens

### Ask

- How does an entrepreneur identify an opportunity?
- What do you think are the common queries or concerns faced by entrepreneurs?
- How can you identify new business opportunity?

### Say

- Let's talk about opportunity, common queries or concerns faced by entrepreneurs, idea as an opportunity, factors to consider when looking for opportunities, ways to identify new business, and opportunity analysis as discussed in Participant Handbook.
- Let's do an activity to understand ways to identify business opportunities within your business.

### Do

- Tell the class that this is an individual activity.
- Tell the participants to create a matrix on their notebooks.
- There will be four boxes in your matrix.
- Strength, Weakness, Opportunity and Threats will be the four headings of the matrix. This is called the SWOT matrix.
- Read out the questions to them and tell the participants they need to answer the questions asked in each matrix.
- Tell them they can also use their own understanding of themselves to fill the SWOT matrix.

## Activity

Do your SWOT analysis

<p><b>Strength</b>            What are your strengths?            What unique capabilities do you possess?            What do you do better than others?            What do others perceive as your strengths?</p>	<p><b>Weakness</b>            What are your weaknesses?            What do your competitors do better than you?</p>
<p><b>Opportunity</b>            What trends may positively impact you?            What opportunities are available to you?</p>	<p><b>Threat</b>            Do you have solid financial support?            What trends may negatively impact you?</p>

## 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 me.
- 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 9.5.6: Entrepreneurship Support Eco-System

### Unit Objectives

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

- Explain the meaning of entrepreneur
- Describe the different types of entrepreneurs
- List the characteristics of entrepreneurs
- Recall entrepreneur success stories
- Discuss the entrepreneurial process
- Describe the entrepreneurship ecosystem
- Discuss the purpose of the 'Make in India' campaign
- Discuss the key schemes to promote entrepreneurs

### Resources to be Used

- Participant Handbook
- Chart papers
- Marker pens
- Pencils
- Colour pencils
- Scale
- Eraser
- Other requisite stationery material

### Ask

- Do you think that entrepreneurs need support?
- What do you think is an eco-system?
- What do you think 'entrepreneurship support eco-system' means?

### Say

- Let's learn what entrepreneurship support eco-system means.
- Discuss 'Entrepreneurship Support Eco-System' as given in the Participant Handbook

### Ask

- Can you define entrepreneurship support eco-system?
- What are the key domains of the support eco-system?

## Say

- Let's learn more about these domains by conducting an activity.
- You have to make a poster showing the components of the six main domains of entrepreneurship support eco-system.

## Team Activity

- Making a poster showing the entrepreneurship support eco-system.

## Do

- Divide the class into groups of four or six.
- Hand out chart paper and coloured pens.
- Explain the purpose and duration of the activity.
- Go around checking the progress of each group.
- Set guidelines pertaining to discipline and expected tasks.

### Activity De-brief

Ask each group to display their poster and explain the key domains of entrepreneurship support eco-system.

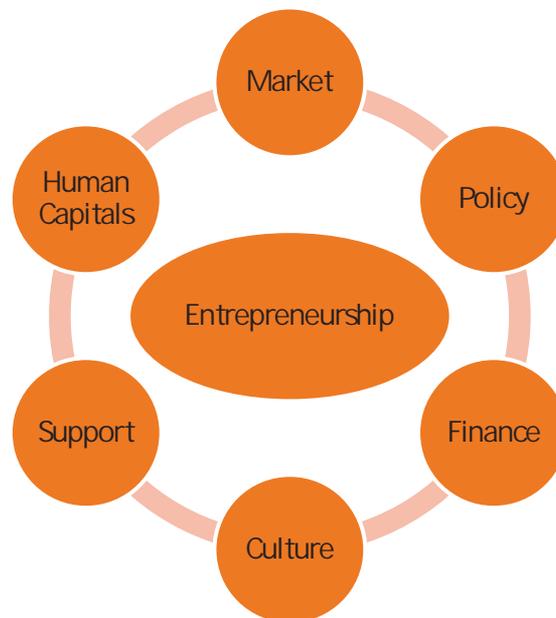


Fig 9.5.2 Key domains of entrepreneurship

## 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 9.5.7: Risk Appetite & Resilience

### Unit Objectives

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

- Discuss the relationship between entrepreneurship and risk appetite
- Discuss the relationship between entrepreneurship and resilience
- Describe the characteristics of a resilient entrepreneur

### Resources to be Used

- Participant Handbook
- Chart papers
- Blank sheets of paper
- Pens
- Marker pens

### Ask

- Can you define risk or explain what constitutes a risk?
- What do you people mean when they say, "This may be a risky proposition"?
- What risks are they talking about?

### Example

- Let's have a look at these two examples:

Rohit and his family were travelling by car from Delhi to Nainital. It was their second trip there. Rohit was familiar with the road. His friends told him that the highway after Rampur was in a bad condition. They advised him to take a shortcut and turn left from Moradabad and take the Kaladhungi road. This road is in a better condition. Since he was going with his family, and did not want to take the risk of getting lost, he left early. He took the Kaladhungi road and reached Nainital well in time.

Suresh and his family too were travelling by car from Delhi to Nainital. It was their second trip there. His friends too advised him to take a shortcut and turn left from Moradabad and take the Kaladhungi road as this road was in a better condition. Suresh too decided to take the Kaladhungi road but he left Delhi in the afternoon. It was dark by the time he reached Kaladhungi, and he was sure that he was taking the correct turn. As it was late, he could not find anyone to give him directions. He ended up being in an unknown place that was scarcely inhabited.

### Say

- Let's see what type of risks Rohit and Suresh took.
- Discuss 'Risk Appetite and Resilience' with the participants as given in the Participant Handbook.

### Say

- Let's learn more about risk appetite and resilience with the help of an activity.

### Team Activity

#### Risk Appetite

- This is a group activity.
- In the previous unit, you read success stories of Mr Dhirubhai Ambani and Dr Karsanbhai Patel.
  - Mr Ambani left his job and started his company Reliance with just Rs. 50,000/-.
  - Dr Patel kept his job, went door-to-door to sell Nirma, and only when the brand started gaining popularity did he start his own company.
  - What types of risk did both of them take?
  - What risk factors, do you think, did they keep in mind before launching their company?
  - Write the Risk Appetite Statement of both the companies.

#### Activity De-brief

- Who took a greater risk?
- What are the differences between the Risk Appetite Statement of both the companies?

### Do

- Instruct the participants that this is group work.
- Divide the class into small groups of 4.
- Give each group a chart paper.
- Tell the participants that they have to evaluate the risks taken by Mr Dhirubhai Ambani and Dr Karsanbhai Patel.
- Give the participants 15 minutes to discuss and write.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

## Ask

- Do you think all entrepreneurial ventures are successful?
- What happens if the first venture is not successful?
- Should the entrepreneur stop when faced with challenges or face them?

## Example

- Let's have a look at the following example:

Vijay Shekhar Sharma is the founder of Paytm, which is a giant Indian e-commerce. He was born in a middle-class family in Uttar Pradesh. He started his first job at an MNC. He quit after six months and built a company One97 with his friends. As One97 grew bigger, it needed more money because it was running more servers, bigger teams, and had to pay royalty. At that time, the tech bubble popped and technology companies were running in losses. Finally, money ran out. So One97 took loans and then more loans at higher rates of interest, as high as 24 per cent, and became caught in a vicious cycle.

In 2014, Paytm was launched with online wallet services after which, the company enabled online payment transactions. The company got licenses from RBI in 2016 to launch India's first ever payment bank. Moreover, the main motive of Paytm was to transform India into a cashless economy.

After demonetization came into effect, Vijay Shekhar Sharma started promoting online and digital transactions to deal with the cash crunch. In fact, the service of the company's mobile wallet is accepted across India. The logo of Paytm is now popular almost everywhere from tea stalls to major companies.

## Say

- Let's see what qualities made Vijay Shekhar Sharma a resilient entrepreneur.
- Discuss Entrepreneurship and Resilience with the participants as given in the Participant Handbook.

## Say

- Let's learn more about entrepreneurship and resilience with the help of an activity.

## Team Activity

### Entrepreneurship and Resilience

- This is a group activity.
- Think of some entrepreneurship ventures that faced challenging times, but later resulted in success stories.
- Who is the founder of that company?
- What challenging times did it face?
- How did it overcome those challenges?
- List the resilient characteristics of the entrepreneur.

### Activity De-brief

- Each group to give their presentation.
- Why did you choose this company?
- What is the success story of the company?

## Do

- Instruct the participants that this is group work.
- Divide the class into small groups of 4.
- Give each group a chart paper.
- Tell the participants that they have to think of an entrepreneur who faced challenging times, but eventually succeeded.
- Give the participants 15 minutes to discuss and write.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

## Summarize

- You can summarize the key points of the unit.
- Ask the participants what they learned from the activities.
- Clarify any questions or doubts they might have.

## UNIT 9.5.8: Success and Failures

### Unit Objectives

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

- Discuss how to deal with failure

### Resources to be Used

- Participant Handbook

### Ask

- Have you heard the quote 'nothing is impossible'?
- What do you think it means?
- Do you think that all successful entrepreneurs became famous overnight or did they have to struggle or face failure before succeeding?

### Example

- Let's have a look at this example.

Shah Rukh Khan, also known as, SRK or King Khan is a force to reckon with. Did he achieve stardom overnight?

Shah Rukh Khan, who has seen many struggles in his life – he has slept on streets, struggled to support himself and his sister at a very young age, and lost his parents very early in life, which led to his sister seeking mental health support. Amidst all the chaos and challenges, he kept pushing himself, and today he stands tall as the 'Badshah of Bollywood'. Certainly, those years were not easy for him.

When he was young, he stood at Marine Drive and said, "I will rule this city one day". Failure was not just his companion during or before his stardom, it is still a substantial part of his life. Success does not come easy. What made him a star was his acceptance of failure and the urge to improve.

### Say

- How do you define success and failure?
- What is fear?
- Discuss "success and failure" with the participants as given in the Participant Handbook.

## Ask

- Have you felt or experienced fear?
- What led you to feel that emotion?
- How did you handle it?

## Say

- Let's learn the about success and failure with the help of an activity.

## Team Activity

- Divide the class into groups of four.
- Instruct them to think of one scenario where they have to interview a successful entrepreneur.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.
- They have to choose one person from the group as the interviewee and one as the interviewer.
- Go around and make sure they have understood what is to be done and are discussing the roles properly.
- Check that everyone understands their role. Give clarifications if needed. Give the participants about 5 minutes to discuss and decide their roles.
- Ask the groups to stop the discussion as soon as the time is over.
- Invite each group one by one to come and present their interview as a role play.

## Notes for Facilitation

### Facilitating Role Plays

#### Preparing for the activity

1. Carefully review the details of the scenario and the character descriptions.
2. Become familiar with the key issues being addressed in the scenario.
3. Study the provided material so that you are ready to address issues related to the situations depicted in the role plays.
4. Anticipate potential questions that might be raised by the participants and be ready to address them.

#### Conducting the activity

1. Introduce the activity. Emphasize that role playing provides participants with an opportunity to apply their new knowledge, skills, and tools in situations that simulate actual interactions with customers.

2. Ask participants to form pairs. Direct the members of each group to choose who will play the roles. Remind the groups that each participant should be given the opportunity to play/practice the different roles.
3. Conduct a demonstration so that participants become familiar with the expectations related to the roles and support materials.
4. To maintain spontaneity of the interactions during the role play, ask the participants not to discuss the details of their roles prior to the role play.
5. Give the pairs 15-20 minutes to conduct the role play.
6. Circulate among the groups to answer any questions that may arise and provide guidance as needed.
7. After all the pairs have finished with the role play, conduct a de-briefing session on each role play.
8. Ask the groups to take five minutes to talk about what happened during the role play. The groups should discuss the questions given in the de-briefing for each role play. Encourage participants to provide constructive criticism during their discussions.
9. Conclude the activity by asking participants to think about whether and how they might use scripted role plays in their real life.

## Summarize

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

## UNIT 9.6: Preparing to be an Entrepreneur

### Key Learning Outcomes

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

1. Discuss how market research is carried out
2. Describe the 4 Ps of marketing
3. Discuss the importance of idea generation
4. Recall basic business terminology
5. Discuss the need for CRM
6. Discuss the benefits of CRM
7. Discuss the need for networking
8. Discuss the benefits of networking
9. Discuss the importance of setting goals
10. Differentiate between short-term, medium-term and long-term goals
11. Discuss how to write a business plan
12. Explain the financial planning process
13. Discuss ways to manage your risk
14. Describe the procedure and formalities for applying for bank finance
15. Discuss how to manage their own enterprise
16. List the important questions that every entrepreneur should ask before starting an enterprise

## UNIT 9.6.1: Market Study/ The 4Ps of Marketing/ Importance of an IDEA: Understanding Market Research

### Unit Objectives

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

- Discuss how market research is carried out
- Describe the 4 Ps of marketing
- Discuss the importance of idea generation

### Resources to be Used

- Participant Handbook
- Chart papers
- Markers/pens
- Blank sheets of paper

### Ask

- Suppose, you want to open a restaurant, what are the factors you will consider?
- How will you promote your restaurant?

### Example

- Let's have a look at this example.

Arjun was an MBA working in a company. But he wanted to start a low cost budget hostel for foreign tourists coming to India. He did a lot of market research before starting the project. Based on the information he gathered, he made his business plan. His hostel is now flourishing and he is thinking of expanding to other tourist destinations.

### Say

- Discuss "Market Study" with the participants. Refer to the Participant Handbook.
- Let's learn about market study and research with the help of an activity.

### Team Activity

Market Study

- This is a group activity.
- You want to start your own tuition centre.
- What type of research will you do?

## Activity De-brief

- Ask each group to come forward and give a brief presentation.
- Encourage other groups to be interactive and ask questions.
- What factors did you keep in mind while doing your research?
- Based on our research would you go ahead and open a tuition centre?

Do 

- Instruct the participants that this is group work.
- Divide the class into small groups of 4 or 6.
- Give each group a chart paper.
- Tell the participants that they have to start their own tuition centre.
- Give the participants 10 minutes to discuss and write the research work they need to do.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Say 

- By opening a tuition centre you are offering a service.

Ask 

- What factors will you keep in mind before opening it?

Say 

- Discuss "The 4Ps of Marketing" with the participants as given in the Participant Handbook.

Say 

- Let's learn about the 4Ps of Marketing with the help of an activity.

Team Activity 

## 4Ps 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 what 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 9.6.2: Business Entity Concepts

### Unit Objectives

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

- Recall basic business terminology

### Resources to be Used

- Participant Handbook

### Say

- Let's recall some basic business terminology.
- Discuss the Business Entity Concepts as given in the Participant Handbook.
- Let's learn some basic business terminology by having an activity.
- We will have a quiz today.

### Activity

- The activity is a quiz.

### Do

- Divide the class in two groups and give a name to each group.
- Explain the rules of the quiz. For each correct answer the group gets 1 mark.
- If the group is unable to answer the question is passed to the next group.
- Explain the purpose and duration of the activity.
- Ask the questions of the quiz.
- Keep a score of the groups.
- Set guidelines pertaining to discipline and expected tasks.

### Summarize

- Summarize the unit by discussing the key points.

## Notes for Facilitator on

### 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 9.6.3: CRM & Networking

### Unit Objectives

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

- Discuss the need for CRM
- Discuss the benefits of CRM
- Discuss the need for networking
- Discuss the benefits of networking

### Resources to be Used

- Participant Handbook

### Ask

- Can your business run without customers/buyers?
- Who is the most important entity in any business?

### Say

- The key to every successful 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 realizes 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 realized 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 9.6.4: Business Plan: Why Set Goals?

### Unit Objectives

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

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

### Resources to be Used

- Participant Handbook
- Chart papers
- Blank papers
- Marker pens
- Ruler

### Ask

- Remember we had written SMART Goals in a previous session? Let's try and recall why it is important to set goals?
- While framing SMART goals, we talked about 'T' in SMART, which was 'Time Bound'? What do we mean by time bound goals?
- What time limit did you set for your goal - 3 weeks, 3 years, 10 years?

### Say

- Talk about short term, long term and medium-term goals, as discussed in the Participant Handbook.

### Ask

- As you are planning to become an entrepreneur, you must have thought of an idea for a start-up. What is your business idea?

### Do

- Ask few participants to share their business ideas.

Ask 

- Have you created a business plan for your business idea?
- Do you think it is important to have a business plan in place? Why/ why not?

Say 

- Talk about 'Why Create a Business Plan' as discussed in the Participant Handbook.
- Let's understand it better with the help of an activity.

Team Activity 

Writing a business Plan

- This is a group activity.
- Give the groups the required resources such as chart paper and markers.
- This activity is divided into two parts:
  1. Create a business idea
  2. Develop a business plan
- The group will discuss and come up with a new business idea and present their idea to the class.
- In the second part of the activity the group will develop a business plan for the business idea.
- The business plan prepared will be presented by the groups to the class.

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 Facilitator on

- Keep the business plan format ready in a flipchart to display it during the activity.

## UNIT 9.6.5: Procedures and Formalities for Bank Finance

### Unit Objectives

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

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

### Resources to be Used

- Participant Handbook
- 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 invest 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 articles 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 9.6.6: Enterprise Management – An Overview: How to Manage Your Enterprise?

### Unit Objectives

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

- Discuss how to manage their own enterprise

### Resources to be Used

- Participant Handbook

### Ask

- Having set up a business, do you think it is possible to do everything on your own?
- Does one require trained persons for help?
- What does management mean?

### Say

- Let's have a look at this example:  
Kapil had a small business that was beginning to pick up pace. He wanted to expand his business, and therefore employed few more people. One day, as he was walking past Ramesh, one of his new employees, he overheard Ramesh talking rudely to a customer on the phone. This set him thinking. Kapil realised that he should have regular team meetings to motivate his employees and speak with them about any problems they might be facing during work. He should also conduct training sessions on new practices, so 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 questions 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 to make a matrix they need to fill.
- They have to write the main topics and key words that will help them effectively manage their enterprise.
- Give the participants 15 minutes to discuss and write.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

## Summarize

- Ask the participants what they have learned from this exercise/activity.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the importance of effective management to run an enterprise as given in the Participant Handbook.

## UNIT 9.6.7: 20 Questions to Ask Yourself before Considering Entrepreneurship

### Unit Objectives

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

- List the important questions that every entrepreneur should ask before starting an enterprise

### Resources to be Used

- Participant Handbook
- Blank sheets of paper
- Pens

### Ask

- Why do you want to become an entrepreneur?

### Say

- It is very important to know why you want to become an entrepreneur. Your personal goals for becoming an entrepreneur play a key role in the success of your business. Your goals should be clear well before you start your business.
- Apart from the goals, the other aspects of business that you need to bear in mind are the potential problems that you may face to set-up, your areas of interest, and all the other dimensions of the business.
- Let's understand it better with the help of some questions that every entrepreneur should ask before starting their own business.
- Open the Participant Handbook section named '20 Questions to Ask Yourself Before Considering Entrepreneurship'. You have to answer the questions individually.
- Then, we will have a class discussion on all the questions.

### Do

- Read out the questions one by one in front of all the participants.
- Participants have to answer all the one by one questions.
- Give the class 10-15 minutes to note down their answers.
- At the end of 15 minutes, open the discussion for all the questions.
- Moderate the discussion by focusing on the relevant points.

- Keep a check on time and don't let the discussion get sabotaged or lose track of time. Ensure all the questions are covered and discussed.
- 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**  
कौशल भारत - कुशल भारत



सत्यमेव जयते  
GOVERNMENT OF INDIA  
MINISTRY OF SKILL DEVELOPMENT  
& ENTREPRENEURSHIP



N · S · D · C  
National  
Skill Development  
Corporation

Transforming the skill landscape



## 10. Annexures

Annexure 1 – Training Delivery Plan

Annexure 2 – Assessment Criteria

## Annexure 1

## Training Delivery Plan

Training Delivery Plan			
Program Name:	Certificate Course in Field Technician – Other Home Appliances		
Qualification Pack Name & Ref. ID	Field Technician – Other Home Appliances (ELE/Q3104)		
Version No.	V1.0	Version Update Date	07-12-2015
Minimum Educational Qualification	8 <sup>th</sup> Standard passed		
Maximum Educational Qualification	ITI Diploma		
Training Outcomes	By the end of this program, the participants will be able to: <ul style="list-style-type: none"> <li>• Engage with customer for service</li> <li>• Install the water purifier</li> <li>• Repair dysfunctional water purifier</li> <li>• Repair dysfunctional mixer/juicer/grinder</li> <li>• Repair dysfunctional microwave oven</li> <li>• Interact with colleagues</li> </ul>		

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Ads	Duration
1	Engage with customer for Service	Interaction with customer	<ul style="list-style-type: none"> <li>Interact with the customer prior to visit</li> <li>Interact with customer at their premises</li> <li>Suggest possible solutions to customer</li> <li>Achieve productivity and quality as per company's norms</li> </ul>	ELE/N3101 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC22, PC23, SB1, SB2	Facilitator-led – Discussion		5 hrs
2	Install the water purifier	Interaction with customer	<ul style="list-style-type: none"> <li>Interact with the customer prior to visit</li> <li>Interact with customer at their premises</li> <li>Suggest possible solutions to customer</li> <li>Achieve productivity and quality as per company's norms</li> </ul>	ELE/N3118 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC30, PC31, PC32, PC33, PC34, PC35, PC36, PC37	Facilitator-led – Discussion Demonstration		7 hrs
3	Repair dysfunctional water purifier	Fault identification	<ul style="list-style-type: none"> <li>Understand the symptoms in the water purifier and identify the fault</li> <li>Replace dysfunctional part in the water purifier unit</li> <li>Confirm functionality of the repaired unit</li> </ul>	ELE/N3119 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC22, PC23, PC24, PC25, PC26, PC27, PC28, PC29, PC30	Facilitator-led – Discussion Demonstration	a. Usage of Multimeter (Analog) b. Usage of Multimeter (Digital) c. Water Pressure Gauge d. TDS Meter e. Hand Tools	6 hrs

			<ul style="list-style-type: none"> <li>Achieve productivity and quality as per company's norms</li> </ul>			f. Maintenance Tools	
4	Repair dysfunctional mixer/juicer/grinder	Fault identification	<ul style="list-style-type: none"> <li>Understand the symptoms in the appliance and identify the fault</li> <li>Replace dysfunctional part of the small appliance</li> <li>Confirm functionality of the repaired unit</li> <li>Achieve productivity and quality as per company's norms</li> </ul>	ELE/N3120 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC22, PC23, PC24, PC25, PC26, PC27, PC28, PC29, PC30	Facilitator-led – Discussion Demonstration	a. Usage of Multimeter (Analog) b. Usage of Multimeter (Digital) c. Water Pressure Gauge d. TDS Meter e. Hand Tools f. Maintenance Tools	6 hrs
5	Repair dysfunctional Microwave oven	Fault identification	<ul style="list-style-type: none"> <li>Understand the symptoms in the microwave and identify the fault</li> <li>Replace dysfunctional part in the microwave</li> <li>Confirm functionality of the repaired unit</li> <li>Achieve productivity and quality as per company's norms</li> </ul>	ELE/N3121 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC22, PC23, PC24, PC25, PC26, PC27, PC28	Facilitator-led – Discussion Demonstration	a. Usage of Multimeter (Analog) b. Usage of Multimeter (Digital) c. Water Pressure Gauge d. TDS Meter e. Hand Tools f. Maintenance Tools	7 hrs
6	Interact with colleagues	Coordination with colleagues	<ul style="list-style-type: none"> <li>Interact with supervisor or superior</li> <li>Coordinate with colleagues</li> </ul>	ELE/N9901 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12	Demonstration		6 hrs

				PC13, PC14, PC15, PC16,			
--	--	--	--	----------------------------	--	--	--

## Annexure II

## Assessment Criteria

## CRITERIA FOR ASSESSMENT OF TRAINEES

Assessment Criteria for "Field Technician: Other Home Appliances"	
Job Role	Field Technician: Other Home Appliances
Qualification Pack	ELE/Q3104
Sector Skill Council	Electronics Sector Skills Council of India
<p>Guidelines for Assessment</p> <ol style="list-style-type: none"> <li>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.</li> <li>The assessment for the theory part will be based on knowledge bank of questions created by the SSC.</li> <li>Individual assessment agencies will create unique question papers for theory and skill practical part for each candidate at each examination/training centre.</li> <li>SSC will create unique evaluations for skill practical for every student at each examination/training centre based on these criteria.</li> <li>To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS.</li> <li>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.</li> <li>In case of unsuccessful completion, the trainee may seek reassessment on the qualification pack.</li> </ol>	

NOS	Assessment Strategy Performance criteria	Marks Allocation		
		Total	Theory	Practical
1. ELE/N3101 Engage with customer for service and raw materials	PC1. check customer complaint registered at customer care or installation schedule	3	1	2
	PC2. call customer to confirm problem and fix time for visit	3	1	2
	PC3. greet the customer and confirm the problem registered	4	2	2
	PC4. be polite and patient when interacting with customer	4	2	2
	PC5. check about warranty status of appliance and annual maintenance contract	4	2	2
	PC6. anticipate possible problems to carry tools and parts accordingly	4	2	2
	PC7. ascertain customer location in order to make the route plan for the day	3	1	2

	PC8. enquire about the symptoms and history of problems in the appliance	5	2	3
	PC9. ask about the age of appliance and status of upkeep	5	2	3
	PC10. identify the problem based on customer's information	5	2	3
	PC11. communicate the problems identified and educate on possible reasons	5	2	3
	PC12. inform about costs involved	5	2	3
	PC13. discuss the problem(s) identified with customer	6	2	4
	PC14. suggest possible solutions and costs involved	6	2	4
	PC15. explain the time required and methodology for servicing necessary	6	2	4
	PC16. seek customer's approval on further action	6	2	4
	PC17. accurately assess the problem and solution(s) necessary	4	1	3
	PC18. offer most appropriate and cost-effective service as per customer's requirement	4	2	2
	PC19. communicate problem effectively in order to secure customer's confidence	4	2	2
	PC20. ensure customer satisfaction and positive feedback	4	2	2
	PC21. record minimum customer complaints post service	4	2	2
	PC22. avoid repeat problem post service	3	1	2
	PC23. prepare most optimum route plan to complete daily target visits	3	1	2
		100	40	60
2. ELE/N3118 Install the water purifier	PC1. visit the customer's premise before carrying out the installation	2	1	1
	PC2. interact with the customer to understand whether the water purifier would be placed under the sink (UTS) or on the wall	3	1	2
	PC3. check that the location meets structural requirements such as distance from power supply, vicinity to plumbing point, etc.	2	1	1
	PC4. make the customer aware of any pre-installations/masonry/electrical work to be carried out and educate the customer about requirement of adequate water pressure at the inlet source	2	1	1
	PC5. make necessary markings for placement of the water purifier unit	2	1	1
	PC6. seek appointment for the next visit	2	1	1
	PC7. remove the packaging in which the purifier was shipped to customer from point of sale/warehouse	2	1	1
	PC8. check that the product matches the customer order in terms of colour and make	2	1	1

PC9. check that all supporting accessories purchased have are there in the pack	2	1	1
PC10. check that tools and fitments required for the installation are available	2	1	1
PC11. clear up the packaging material waste and dispose as per company's norms	2	1	1
PC12. check if pre-installation requirements are met	2	1	2
PC13. make measurements at the location identified and drill holes ensuring no internal wiring damage takes place	3	2	2
PC14. mount the filter and ensure that the screws are fastened securely	4	1	2
PC15. drain the inlet line before connecting it to the water purifier	3	1	2
PC16. connect the outlet pipe to the drain (if applicable)	3	1	2
PC17. connect the purifier to the nearest power supply point	3	1	2
PC18. ensure that the filter is aligned as per instructions in the installation manual	3	2	3
PC19. run the purifier and ensure there are no leaks at any point	5	2	3
PC20. demonstrate the features and utility to the customer	5	1	1
PC21. explain maintenance procedures to be followed while using the water purifier	5	2	1
PC22. fill in customer acknowledgement form	2	1	2
PC23. seek customer's signature	2	1	2
PC24. complete other documentation for recording completion of installation	3	1	2
PC25. call customer care and inform about job completed	3	1	2
PC26. understand the work requirement from superior, periodically	3	1	2
PC27. report to superior on the work completed	3	1	2
PC28. escalate the customer issues and problems that are unresolved in the field	3	1	2
PC29. document the work completed on the company ERP software for tracking and future references	3	1	2
PC30. remove packaging without damage to the water purifier unit and accessories	2	1	1
PC31. position the water filter as per requirements specified in instructions manual	2	1	1
PC32. educate customer on importance of proper placing	2	1	1
PC33. carry and use the correct tools and equipment for installation	2	1	1

	PC34. operate and check that they are in a safe and stable condition	2	1	1
	PC35. complete installation in time target given	2	0	2
	PC36. educate customer on proper operation and maintenance procedures	2	1	1
	PC37. complete daily field schedule as per instructions/format within the designated time	2	1	1
		100	40	60
3. ELE/N3119 Repair dysfunctional Water Purifier	PC1. diagnose the fault based on customer interaction and initial inspection	4	2	2
	PC2. check if the water pressure is as specified by company standards	3	1	2
	PC3. shut off the system by turning off water supply and unplug the unit	3	1	2
	PC4. place a piece of cloth or towel under the unit in order to avoid any water spills on the floor	3	1	2
	PC5. carry out basic inspection of feed water valve, tank valve, tubing, housing etc.	3	1	2
	PC6. separate and inspect every part of the unit if the fault is not identified through basic inspection	4	2	2
	PC7. send to factory for in depth diagnosis, if problem remains un-identified at site	4	2	2
	PC8. replace component at location, if the fault identified is because of damage of components such as valves or wearing out of membrane or filter	11	4	7
	PC9. remove and replace the faulty module with a functional one, either on a second visit or as pre-identified and collected from the service centre, if the problem is at the PCB level or components that cannot be replaced at site	11	4	7
	PC9. reassemble the unit	3	1	2
	PC10. start supply of water to the unit and confirm that unit is functioning	3	1	2
	PC11. check that all the modules of the unit work as per specifications	4	2	2
	PC12. demonstrate and confirm functionality of the unit with customer	4	2	2
	PC13. educate the customer about cleaning procedures and other best practices	3	1	2
	PC14. collect necessary payments from the customer, if applicable	3	1	2
	PC15. fill in customer acknowledgement form	3	1	2
	PC16. complete other documentation procedures to record complaint closure	3	1	2
	PC17. ensure damage free handling of the unit	2	1	1
PC18. diagnose the problem accurately and in assigned time	2	1	1	

	PC19. identify the problem modules accurately such as inlet valve, auto shut off valve, saddle valve, housing, O ring, PCB	2	1	1
	PC20. fix the dysfunctional water purifier in designated time	2	1	1
	PC21. rectify completely to avoid repeat fault in the water purifier	2	1	
	PC22. record minimum customer complaints post service	2	1	1
	PC23. meet daily target on a leading to number of complaints	2	1	1
	PC24. select the right spares according to recorded complaints at the customer care	2	1	1
	PC25. clearly communicate type of module required to the service centre, if a faulty module is to be replaced	2	1	1
	PC26. secure repairs completion receipt from customer	2	1	1
	PC27. educate customer on water purifier maintenance and correct practices to follow in order to avoid further problems	2	0	2
	PC28. ensure 100% customer satisfaction	2	0	2
	PC29. recover payments as per rate sheet/ communication from customer care	2	1	1
	PC30. sell related products such as new equipment or Annual Maintenance Contracts (AMC) as per company policy	2	1	1
		100	40	60
4. ELE/N3120 Repair dysfunctional mixer/juicer/ grinder	PC1. understand usage pattern of the mixer/grinder from the customer	4	2	2
	PC2. diagnose the fault based on customer interaction and initial inspection	5	2	3
	PC3. unplug the unit, turn overload switch back to original position if the appliance turned off due to overload	4	2	2
	PC4. carry out basic tests such as power supply inspection, volt ampere test and earth test power supply	4	2	2
	PC5. separate and inspect every module of the unit if the fault is not identified through basic tests	4	2	2
	PC6. send to factory for in depth diagnosis, if problem remains un-identified at site	4	2	2
	PC7. replace component at location, if the fault identified is because of damage of components such as relay or thermostat	12	4	8
	PC8. remove and replace the faulty module with a functional one, either on a second visit or as pre-identified and collected from the service	12	4	8

	centre, if the problem is at the PCB level or components that cannot be replaced at site			
	PC9. reassemble the unit	4	2	2
	PC10. switch on power supply and confirm that unit is functioning	3	1	2
	PC11. demonstrate and confirm functionality of the unit with customer	4	2	2
	PC12. educate the customer about cleaning procedures, using different jars for different purposes and other best practices	4	2	2
	PC13. collect necessary payments from the customer, if applicable	3	1	2
	PC14. fill in customer acknowledgement form	3	1	2
	PC15. complete other documentation procedures to record complaint closure	3	1	2
	PC16. ensure damage free handling of the unit	2	1	1
	PC17. diagnose the problem accurately and in assigned time	2	1	1
	PC18. identify the problem modules accurately such as the power supply, overload circuit breaker, motors, PCB	2	1	1
	PC19. fix the dysfunctional appliance in designated time	2	1	1
	PC20. rectify completely to avoid repeat fault in the appliance	2	1	1
	PC21. record minimum customer complaints post service	2	1	1
	PC22. meet daily target on a leading to number of complaints	1	0	1
	PC23. select the right spares according to recorded complaints at the customer care	2	1	1
	PC24. clearly communicate type of module required to the service centre, if a faulty module is to be replaced	2	0	2
	PC25. secure repairs completion receipt from customer	2	1	1
	PC26. educate customer on maintenance and correct practices to follow in order to avoid further problems	2	1	1
	PC27. ensure 100% customer satisfaction	2	0	2
	PC28. recover payments as per rate sheet/ communication from customer care	2	0	2
	PC29. sell related products such as new equipment or Annual Maintenance Contracts (AMC) as per company policy	2	1	1
		100	40	60
	PC1. understand usage pattern of the microwave from the customer	5	2	3

5. ELE/N3121 Repair Dysfunctional Microwave oven	PC2. diagnose the fault based on customer interaction and initial inspection	5	2	3
	PC3. unplug the unit, carry out basic tests such as power supply inspection, volt ampere test and earth test power supply	5	2	3
	PC4. separate and inspect every module of the unit if the fault is not identified through basic tests	5	2	3
	PC5. send to factory for in depth diagnosis, if problem remains un-identified at site	5	2	3
	PC6. replace component at location, if the fault identified is because of damage of components such as relay or thermostat	12	4	8
	PC7. remove and replace the faulty module with a functional one, either on a second visit or as pre-identified and collected from the service center, if the problem is at the PCB level or components that cannot be replaced at site	12	4	8
	PC8. reassemble the unit	4	2	2
	PC9. switch on power supply and confirm that unit is functioning	4	2	2
	PC10. demonstrate and confirm functionality of the unit with customer	4	2	2
	PC11. educate the customer about cleaning and maintenance procedures	4	2	2
	PC12. collect necessary payments from the customer, if applicable	4	1	3
	PC13. fill in customer acknowledgement form	3	1	2
	PC14. complete other documentation procedures to record complaint closure	3	1	2
	PC15. ensure damage free handling of the unit	2	1	1
	PC16. diagnose the problem accurately and in assigned time	1	0	1
	PC17. identify the problem modules accurately such as the power supply, timer/control panel, magnetron, motor etc	2	1	1
	PC18. fix the dysfunctional appliance in designated time	2	1	1
	PC19. rectify completely to avoid repeat fault in the appliance	2	1	1
	PC20. record minimum customer complaints post service		1	1
	PC21. meet daily target on a depending to number of complaints	1	0	1
	PC22. select the right spares according to recorded complaints at the customer care	2	1	1
	PC23. clearly communicate type of module required to the service center, if a faulty module is to be replaced	2	1	1

	PC24. secure repairs complete on receipt from customer	2	1	1
	PC25. educate customer on maintenance and correct practices to follow in order to avoid further problems	2	1	1
	PC26. ensure 100% customer satisfaction	2	1	1
	PC27. recover payments as per rate sheet/ communication from customer care	1	0	1
	PC28. sell related products such as new equipment or Annual Maintenance Contracts (AMC) as per company policy	2	1	1
		100	40	60
6. ELE/N9901 Interact with colleagues	PC1. understand work requirements, targets and incentives	5	2	3
	PC2. learn about new product models, their features and functions	5	2	3
	PC3. report problems identified in the field	5	2	3
	PC4. escalate customer concerns that cannot be handled on field	5	2	3
	PC5. resolve personnel issues	5	2	3
	PC6. receive feedback on work standards and customer satisfaction	5	2	3
	PC7. communicate any potential hazards at a particular location	5	2	3
	PC8. meet given targets	5	2	3
	PC9. deliver work of expected quality despite constraints	5	2	3
	PC10. have a happy and satisfied customer	5	2	3
	PC11. resolve inter-personnel conflicts and achieve smooth workflow	8	3	5
	PC12. receive spares from tool room or stores	8	3	5
	PC13. deposit faulty modules and tools to stores	8	3	5
	PC14. pass on customer complaints to colleagues in a respective geographical area	9	4	5
	PC15. assist colleagues with resolving field problems	9	4	5
	PC16. clearly demarcate roles of each team member	8	3	5
		100	40	60

Do 

- Explain each Guideline for Assessment in detail
- Explain the score that each trainee needs to obtain
- Recapitulate each NOS one-by-one and take participants through the allocation of marks for Theory and Skills Practical.
- Explain the Allocation of Marks. Explain that they will be assessed on Theory and Skills Practical.







**Skill India**  
कौशल भारत - कुशल भारत



सत्यमेव जयते  
GOVERNMENT OF INDIA  
MINISTRY OF SKILL DEVELOPMENT  
& ENTREPRENEURSHIP



N.S.D.C.  
National  
Skill Development  
Corporation  
Transforming the skill landscape



Skilling India in Electronics

Address : 602-608, 6th Floor, Ansal Chambers-II, Bhikaji Cama Place,  
New Delhi-110066

Email : [info@essc-india.org](mailto:info@essc-india.org)

Website : [www.essc-india.org](http://www.essc-india.org)

Phone : +91-11-46035050

Price: ₹