

Field Technician – Refrigerator



Funded Partner of NSDC

Orion House, 28, Chinar Park, Rajarhat Road
Kolkata – 700157, Ph.: +91 33 40051635

www.orionedutech.com

TABLE OF CONTENTS

Chapter - 1	1
Introduction to Field Technician – Refrigerator	1
1.1 Electronic Appliances Available in the Market	1
1.2 Differentiation between Consumer Electronics and Domestic Appliances	2
1.3 Who are Field Technicians?	4
 Chapter – 2	 7
Various Parts of a Refrigerator	7
2.1 Identify the Tools of a Refrigerator	7
2.2 Resistors	14
2.3 Basic Components of the Appliances	16
2.4 Gaining knowledge of the Mechanism	20
2.5 Packaging	22
2.6 Defrosting	22
2.7 Ice cubes	23
2.8 Cooling Drinks	23
 Chapter - 3	 26
Electrical Components of Various Refrigerator	26
3.1 Proper Maintenance of the Refrigerator	27
3.2 Testing Your Refrigerator Parts for Continuity Using a Multi-meter	29
3.3 Test Temperature Control	29
3.4 Locate and Remove Door Switch	30
3.5 Test the Door Switch	30
3.6 Locate and Remove Defrost Heater	31
3.7 Test the Defrost Heater	31
3.8 Locate and Remove Defrost Timer	32
3.9 Test the Defrost Timer	32
3.10 Locate and Remove the Evaporator Fan	33
3.11 Test Your Evaporator Fan	33

ISO 9001:2015 CERTIFIED

Quality Training | Quality Placement

Chapter - 4	37
Functioning Method of the Refrigerators	37
4.1 Refrigeration Cycle	37
4.2 Fundamental Electronics	39
4.3 Ohm's Law	43
4.4 Knowledge of AC and DC	45
4.5 Series and Parallel Circuits.....	47
4.6 Calculating Equivalent Resistances in Series Circuits	48
4.7 Calculating Equivalent Resistances in Parallel Circuits.....	49
 Chapter – 5	 52
Coordinating with Colleagues	52
5.1 Effective Communication between Co-workers.....	52
5.2 Learning to Interact with your Supervisor	54
5.3 Learning about team building	56
 Chapter – 6	 59
Manage to meet Requirements	59
6.1 Overview: Creation of the Blueprint	59
6.2 Planning Phase (Make a Blueprint).....	59
6.3 Shifting Priority on the Basis of Urgency.....	63
6.4 Importance of Discipline	64
6.5 Time Management	67

CHAPTER - 1

INTRODUCTION TO FIELD TECHNICIAN- REFRIGERATOR

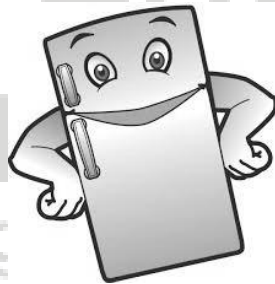
LEARNING OUTCOMES:



- Knowing the basics of the electronic appliances available in the market
- Differentiating between Consumer-Based appliances and Domestic gadgets
- Learning the definition of a field technician

PRE-SESSION ACTIVITY:

- The Trainer will ask the trainees, “Have you seen a refrigerator ever? What was the manufacturing company?”
- The Trainer will ask the trainees to share their experience of handling a refrigerator.



1.1 Electronic Appliances Available in the Market

Electronic devices have become indispensable in the modern life. We have become dependent on the electronic gadgets so badly that we cannot survive a day with them. Think of the devices that we use daily – cell phone, washing machine, laptop, computer, charger, camera, etc. Refrigerator is one of the most useful items that we use on a daily basis. In summer, refrigerator is used extensively. We store food items, water, drinks in the refrigerator to keep them fresh. Those, who live in remote areas, far from the market place, usually go to the market once or twice a week. They shop vegetables, fish, egg, and other essential items, and store them in the refrigerator. Thus, we cannot overlook the contribution of refrigerator.

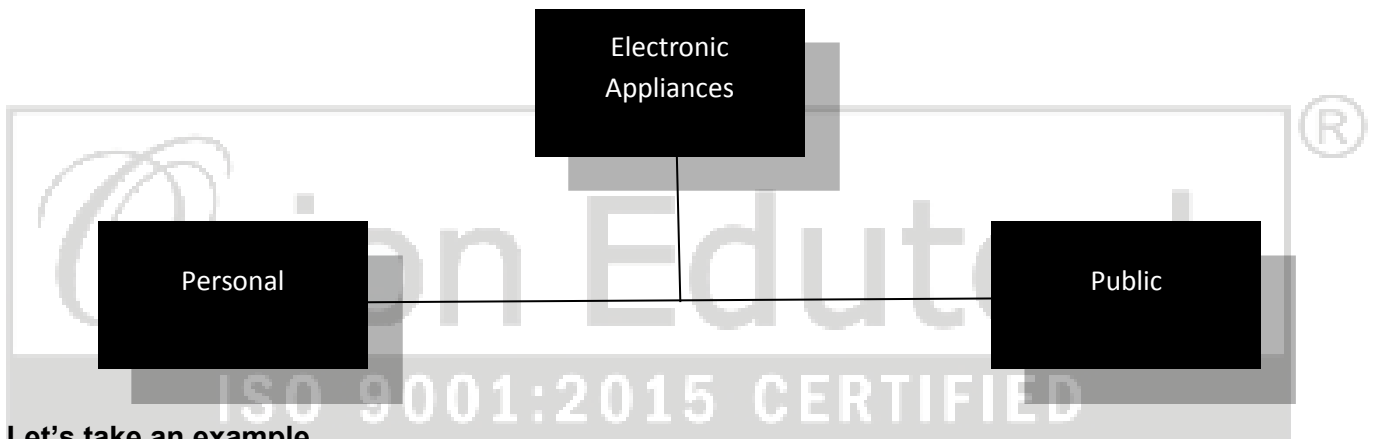
Some of the items are labelled as consumer electronics. In simpler words, the electronic appliances, that serve the purpose of customer consumption, are called consumer electronics. For instance, biometric attendance machine is also an electronic gadget; however, it has no consumer. On the other hand, mobile phone is a typical consumer-based item. On the same note, refrigerator is an appliance, which is marketed as a public-consumption product.



1.2 Differentiation between Consumer Electronics and Domestic Appliances

As discussed above, the electronic gadgets available in the market are of two categories:

1. Consumer Electronics Appliances
2. Domestic/ Public Electronic Appliances



Let's take an example.

When we go to a public place, such as, corporate office, supermarket, shopping mall, multiplex, restaurant, cafe, airport, railway station, etc. we need not to switch on the AC. The air-conditioning system is centrally controlled. The fact indicates that some of the electronic appliances are for public consumption. One cannot regulate the central air-conditioning system in such a way that only he/ she gets the benefits of the same.



Field Technician – Refrigerator

There are varieties of electronic appliances available in the market for public consumption. Some of them are designed for domestic purpose; some of them are used by individuals. For example, AC, refrigerators are appliances which are used for domestic purpose. On the other hand, cell phone, torch, laptop are a few gadgets, which are made for personal use. Here is a list of some useful electronic gadgets:

- Televisions
- DVD players
- Refrigerators
- Washing machines
- Computers
- Laptops
- Tablets

However, on the contrary, smartphones are gadgets, which is for personal use. If we scrutinize closely, we all enjoy the benefits of the both type of electronic appliances. It is difficult to find a person, who does not use smartphone. Similarly, in all public sectors, there are various electronic appliances installed, which are for public use. Thus, the demand of the electronic appliances is high in the market.

However, the electronic gadgets are susceptible to damages. All the appliances require good care, and proper maintenance. Otherwise, the chances of physical and circuit damage is high, which might be expensive to repair.



Orion Edutech
9001:2015 CERTIFIED
Training | Quality Placement

Whenever any instrument gets damaged, we call technicians. They are the experts in their fields. Thus, they are the persons to contact to get the gadgets repaired. In the next indent, we will discuss more regarding the job responsibilities, and the range of work of the field technicians.



Exercise:

1. The appliances, which are for public consumption, are known as _____.
2. AC is an example of _____ electronic gadget.
3. Electronic appliances are the items that we merely use. (State true or false)
4. Airport is an example of public sector. (State true or false)
5. Make a list of public and personal electronic items.

1.3 Who are Field Technicians?

In an office, the common practice is to assign a team or an individual to a particular job role. For instance, a team looks after the maintenance and proper working system of the organization. The team is known as management team. Similarly, a team looks after the operations of various sectors of the company. Thus, it is evident that there is no need to be a “Jack of all trades and master of none”. In contrast, there is huge requirement of experts of a specific job role in the market. If we suffer from electric-line at our home, we inform the concerned department to resolve the issue. We do not seek for a plumber. This is the alignment of the job responsibilities.

A field technician is the person, who masters a particular subject. Whenever, there is any issue regarding that field, the technician comes into the picture. Let’s take another example to understand the definition of the field technicians.



Camera is an instrument which is a treat to our memory. Whenever we see something beautiful, we like to take a snap, so that, we can recall our memory even decades later. This is an example of consumer electronics. If there is any issue with the camera, we go to the camera stores to fix the issue as soon as possible. We go to the stores because the person(s) sitting there are the experts, who are efficient to get to the root-cause of the issue, and amend it. We tend to trust them as they have prolific knowledge regarding the matter.



Similarly, when it comes to any other subject, we should consult field technicians to fix the problem. We try our hands at everything, be it electric-line repairing or laptop repairing; which might cause further damages to the appliances, as we are not the experts. It is advisable to bank on the field technicians to sort out an issue.

Regarding the refrigerators, it is needless to say that refrigerators are complex electronic gadgets. It needs extensive knowledge on the matter to become a technician of a refrigerator. The field technician of refrigerators requires to be very careful, and they need to know delicate operations. In the upcoming chapters, we will get to know the details of the refrigerator, and its parts. Field technician should know each and everything regarding the mechanism and functions of the parts in Toto.



Debriefing of the Chapter

- Electronic gadgets are of two types – Personal and public
- Electronic appliances are sensitive, and highly susceptible to damages
- Field technician is the first point of contact to repair a damaged equipment
- It is advisable not to try hands at repairing refrigerator; rather, call a field technician who can fix the issues quickly

Post Session Activity

- The Trainer will tell the Trainees to do research on the manufacturers of refrigerators and enlist the names.

NOTES 



Test Yourself:

- State true or false against the following systems
 1. A field technician is the person who is master of every subject.
 2. Laptop is a public electronic gadget.
- Fill in the blanks
 1. We store food items, water, drinks in the _____ to keep them fresh.
 2. The electronic appliances, that serve the purpose of customer consumption, are called _____.
- What is the importance of field technicians?
- Which one of the followings is an example of consumer electronics?
 - a) Refrigerator
 - b) USB Device
 - c) Power Bank
 - d) All of the Above



CHAPTER - 2

VARIOUS PARTS OF A REFRIGERATOR

Recall Session:

- There are two types of Electronic gadgets– Personal and public
- Electronic appliances are sensitive, and highly susceptible to damages
- Field technician is the first point of contact to repair any damaged equipment
- It is unsafe to try hands at repairing electronic equipment; rather, call a field technician.

LEARNING OUTCOMES :



- Identifying the different tools of a refrigerator
- Understanding the types of resistors
- Knowing the basic components of the refrigerator
- Gaining knowledge about the mechanism of various electrical appliances
- Vitalizing the packaging to secure safe delivery
- Knowing the procedure of defrosting
- Understanding the method of cooling drinks



PRE-SESSION ACTIVITY:

- The Trainer will show some pictures of the different types of tools of a refrigerator and will mention the names.
- Then the Trainer will show some videos on the different types of parts of a refrigerator.

2.1 Identify the Tools of a Refrigerator

Tools are the essential components of the machine; as bones are the structural components of the animals. Every machine is made up of small tools or parts. Each tool has separate mechanism and function. If any of the tools becomes dysfunctional, the entire machine can go for a toss.

Similarly, refrigerator comprises of various tools and parts. Each part of the refrigerator signifies specific role. Here is a glossary of tools that are indispensable to the refrigerators:

- **Tube Cutter:** Tube cutter, as the name suggests, cuts copper tubing, sizes varying from 1/8” to 1/2”. To cut larger tubes, large tube cutters are required, which are available in the market as well. The blade reamer attached to the tube cutter cleans the burr inside the tube.



- **Flaring Tool:** Flaring tool helps to spread the flares across the copper tube. The flaring tool files and reams the copper tube. The positioning of the copper tubes inside the flaring tool is vital. It is better to ensure that at least 30% of the tube protrudes outside the tool. At the end of the process, take out the copper tube, and look for defects. If there is any defect, amend it right away.



- **Swagging Tool:** The utility of swagging tool comes right after creating flares. The agenda of swaging is to make the resulting diameter as that of the outside diameter. To clamp two tubes, it is important to tally the diameters. If the diameters mismatch, clamping the tubes becomes next to impossible task. Thus, swagging is one of the most significant processes that calls for meticulous care.



- **Brazing Torch:** Brazing torches joins two copper tubes together. A temperature of 800 degree Fahrenheit is required to join the tubes. The fuel used for this process is Map gas; however, oxygen acetylene is also widely used for the application. As the process incorporates high temperature, it is advisable to do it in a well-ventilated area.



- **Copper Bending Tubes:** Copper bending tubes are essential in case of determining the shape of the copper tubes. These tubes vary from 1/4" to 1/8 "in diameter. The professional bending tubes have three moulded half-round wheels, which act as the main lever to the tools.



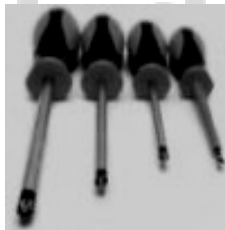
- **Adjustable Wrench:** Adjustable wrench is a very useful tool with adjustable jaws. It is widely used to repair the faulty refrigerators. This tool helps to fix nuts and bolts. One of the benefits of the tool is that it is portable, and easily be accommodated in the tool box.



- **Flat Edge Screw Driver:** Flat edge screw driver, as the name suggest, has a flat driving end. The blade width of an 8” screw driver is 1/4”. This is also a very useful item for a field technician of refrigerators.



- **Philip Screw Driver:** Similar to the flat edge screw drivers, the Philip screw drivers have flat edges. The Philip screw drivers are useful to unfix dysfunctional bolts. However, lack of proper maintenance can easily damage the Philip screw drivers, making the edges blunt and slippery.



- **Alien Wrench:** On the contrary to the flat edge screw drivers, the Alien wrenches have crossed edges. These wrenches are hexagonal. These tools become effective to remove the squirrel-caged fan of a window type air conditioner.



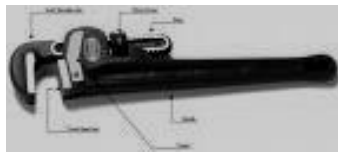
- **Long Nose Plier:** Long nose plier is used to remove a clip from a fan or a holding or a joint. These tools have a typical design. Similar to the Saw fish, the tools have elongated nose to remove the tight bolts. The common length of the long nose plier is 7”.



- **Slip Joint Plier:** This is also another form of plier. A slip joint plier is a mechanical plier which is effective to fasten and adjust the size of the nuts. The typical length of a slip joint plier is 10”.



- **Electrical Plier:** Electrical pliers are most effective in case of any operation at the fuse box. It is risky to use mechanical pliers, like, slip joint plier, to remove a live fuse from the fuse box. Thus, the electrical plier is extensively used to serve the purpose



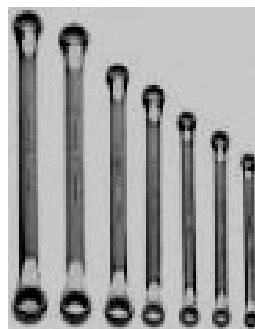
- **Socket Wrench Set:** Socket Wrench set is indispensable for the field technicians. The set of socket wrenches are used to remove stubborn hex nuts or bolts. The advantage of carrying a set of socket wrench is that it allows extension, which helps the technicians to unfix bolts from remote joints.



- **Nut Driver:** Nut drivers are also helpful in removing the hex nuts from remote areas. One of the most important features of the nut drivers is that they can reach the deep down zones. The common nut drivers have straight hand-grip, and T-shaped driver.



- **Box Wrench:** Box wrenches are the most common handheld wrenches. In a set of box wrenches, there are usually 8 – 10 different types of wrenches available. The wrenches are used to unfix the stiff bolts and joints. The diameter of the box wrench determines the utility of the wench.



Field Technician – Refrigerator

- **Open Wrench:** Open wrenches are most useful in losing the tight joints, clips, and bolts. These are also portable and handheld instruments. This is always a big advantage to have a set of open wrenches in the tool box.



- **Flat File:** Flat files are widely used to square fresh copper tube ends. These instruments are very useful in removing burrs from steel brackets as well. These file are very hard, and well-built, so that they don't succumb easily to the pressure.

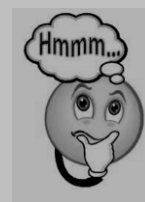


Round File: Round holes are effective in enlarging the holes, and cleaning rusty steel tubes. These are one of those instruments that a field technician cannot afford to forget to carry.



There are some other instruments that are helpful to a field technician. Here is a list of instruments with images:

acement



Do you know?

Portable refrigerators are so useful and popular these days.

Identifying the different tools



Flaring tool with yoke



Tube cutter with reamer



Pipe bender



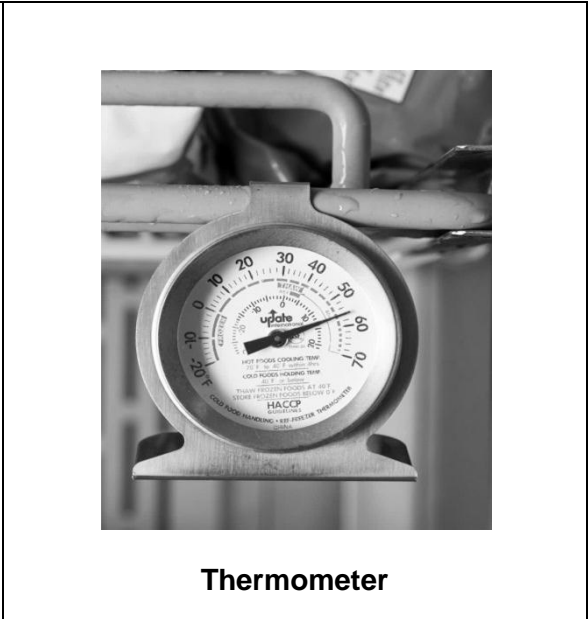
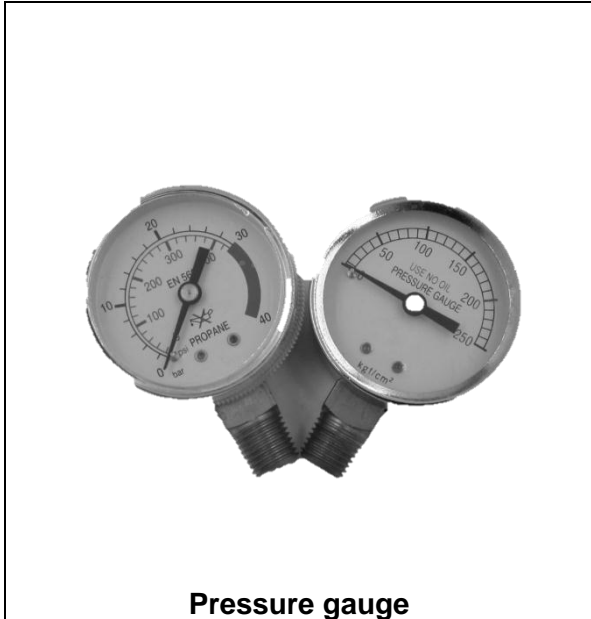
Swaging tool



Pinching tool



Ratchet wrench



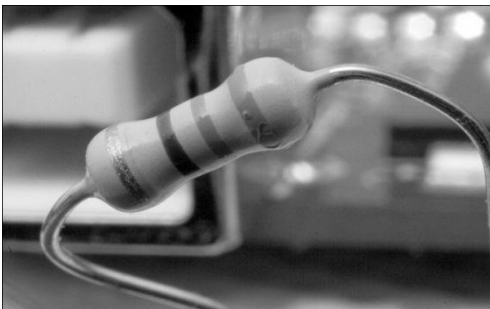
Exercise:

- Identify the following instruments.





2.2 Resistors:



Testing the Resistors

Identify resistors by their appearance.



Do check the physical defects.

Calculate the resistor value from the colour bands.

4 Band Resistor Color Chart

1 0 x10 5%=
100Ω 5%

Color	1 st Digit	2 nd Digit	Multiplier	Tolerance
Black	0	0	X1	
Brown	1	1	X10	1%
Red	2	2	X100	2%
Orange	3	3	X1000	
Yellow	4	4	X10000	
Green	5	5	X100000	
Blue	6	6	X1000000	
Violet	7	7		
Grey	8	8	Gold X0.1	Gold 5%
White	9	9	Silver X0.01	Silver 10%

Interpret typographically coded resistors.



Pick specific value resistors.

Measure the fixed value resistance using ohmmeter/multi-meter.



2.3 Basic Components of the Appliances

A field technician has to work with some basic electronic components when building electronic circuits, including resistors, capacitors, diodes, transistors, and integrated circuits. Here is a brief overview of the functions of each of these basic electronic components.

2.3.1 Transducer

A transducer is a device that converts one type of energy to another. With appliances, the term transducer commonly implies use as a sensor or detector.

2.3.2 Thermostat

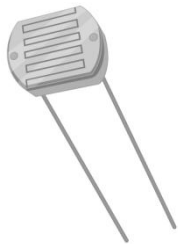


A thermostat is a device for regulating the temperature of a system so that the system's temperature is maintained near the desired level. Almost all appliances use thermostats in some capacity.

2.3.3 Thermistor

A thermistor is a sensor that allows fluctuation of its resistance value with temperature change; this resistance value can then be interpreted by a control system.

2.3.4 Light Dependent Resistor (LDR)



An LDR is a sensor, which uses light to alter its resistance value, resistance decreases as the brightness of light falling on the LDR increases.

2.3.5 Motor

A motor is a transducer, which converts electrical energy into kinetic energy (motion). A motor may have multiple speeds or directions of rotation.

2.3.6 Inductor, Coil, or Solenoid



The inductor is a wire that creates electromagnetic field when current flows through it. These wires convert electrical energy into mechanical energy. Make a note that when a wire gets magnetic, it might produce heat.

2.3.7 Buzzer

Buzzers convert electrical energy to sound. It acts more like a signal.

2.3.8 Fuse



Every device has a capacity regarding temperature resistance. Fuse is a safety device that “blows” or “melts” if the temperature limit is exceeded.

2.3.9 Resistor

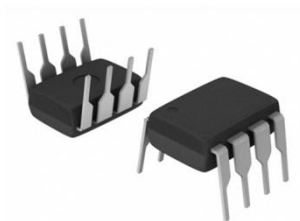


A resistor restricts the flow of current through a circuit.

2.3.10 Heater

A heater is a resistor transducer, which converts electrical energy to heat.

2.3.11 Rheostat

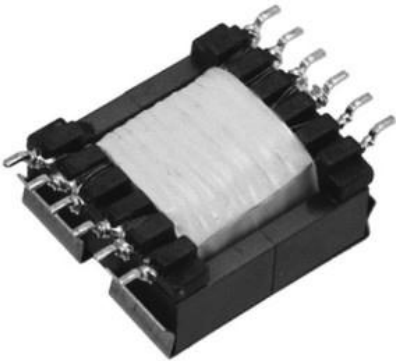


Rheostats are variable resistors have two contacts and are usually used to control current.

2.3.12 Timer

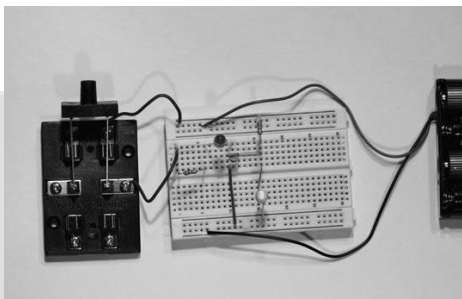
Timers are used in most appliances to control the timing of a particular action.

2.3.13 Transformer



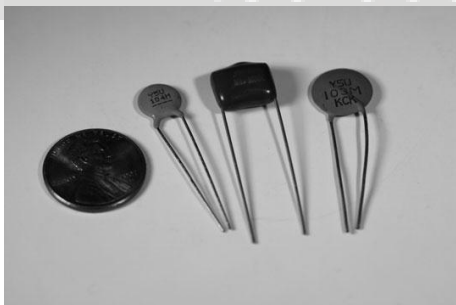
Transformers are a couple of wires that are linked by an iron core. Energy gets transferred to the magnetic field. These are mainly used in the Alternative Current field to increase or decrease the flow of current. .

2.3.14 Diode



The diode acts as a valve which allows the current to flow in a particular direction.

2.3.15 Capacitor



Capacitors act as power banks which store energy even after the device is switched off.

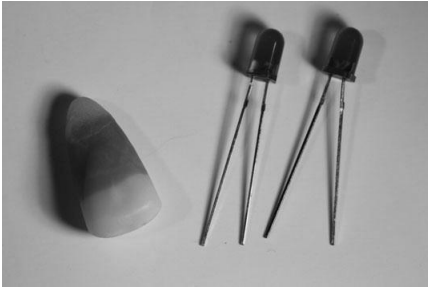
2.3.16 Ground or Earth Connection

This connection is very important; it is usually made with bare wire attached to the cabinet of an appliance, which is in turn connected to earth within the service panel of your home through a "grounded" plug.

2.3.17 Switches

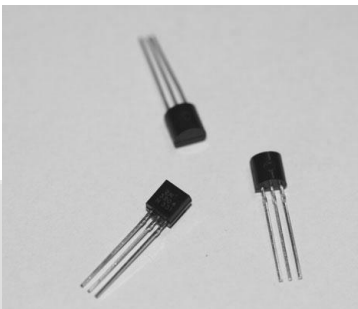
A switch is an electrical device which is employed to interrupt the circuit, interrupting the current and to provide the current from one conductor to a different conductor. The switch works with ON and OFF mechanism.

2.3.18 LED (Light emitting diode)



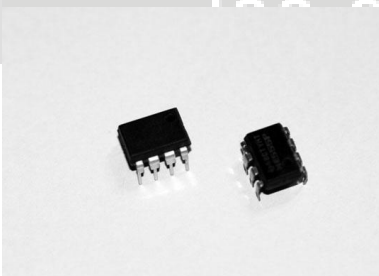
A light-emitting diode (LED) is a semiconductor device that emits visible light when an electric current passes through it. The light is not particularly bright, but in most LEDs it is monochromatic, occurring at a single wavelength.

2.3.19 Transistor



A transistor is a three-terminal device in which a voltage applied to one of the terminals (called the base) can control current that flows across the other two terminals (called the collector and the emitter).

2.3.20 Integrated circuit



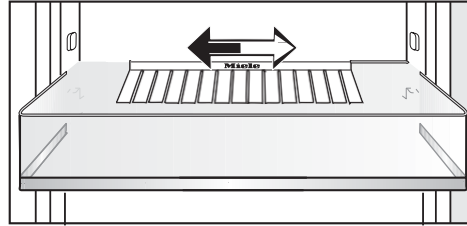
An integrated circuit (IC), sometimes called a chip or microchip, is a semiconductor wafer on which thousands or millions of tiny resistors, capacitors, and transistors are fabricated. An IC can function as an amplifier, oscillator, timer, counter, computer memory, or microprocessor.

Exercise:

- Write the function of the following components:
 1. Timer
 2. Capacitor
 3. Thermostat
 4. LED
 5. Buzzer

Field Technician – Refrigerator

- State true or false against the given statements:
 1. Diode determines the amount of current-flow.
 2. Inductor creates electromagnetic energy.
 3. LDR is a sensor.



2.4 Gaining knowledge of the Mechanism

2.4.1 The fitting mechanism

- **Adjusting the door shelf/bottle shelf**
 - Push the door/bottle shelf upwards, then remove it by pulling it forwards.
 - Replace the door/bottle shelf at the required position. Ensure that it is pushed back into position securely.
- **Moving the bottle holder**
 - The bottle holder can be moved to the left or right to create more room for drinks cartons, for example.



- The bottle holder can be removed completely (e.g. for cleaning).
- Push the bottle shelf upwards, then remove it by pulling it forwards.
- Pull the bottle holder upwards to remove it from the rear edge of the bottle shelf.
- **Moving the shelves**
 - The shelves can be adjusted according to the height of the food.
 - Raise the shelf slightly at the front, and pull it forwards a little until the notch at the side is in line with the shelf support. It can then be raised or lowered to the required level.
 - The raised edge of the protective strip at the back of the shelf must face upwards to prevent food from touching the back of the appliance and freezing to it.
 - Stoppers prevent the shelves from being dislodged by mistake.
- **Using the freezer compartment**
 - Use the freezer compartment to:
 - ✓ Store frozen food,
 - ✓ Make ice cubes,
 - ✓ Freeze small quantities of fresh food.

Up to 2 kg of food can be frozen in 24 hours.

- **Freezing fresh food**

Fresh food should be frozen as quickly as possible. This way the nutritional value of the food, its vitamin content, appearance and taste are not impaired.

Food which takes a long time to freeze will lose more water from its cells, which then shrink.

During the defrosting process, only some of this water is reabsorbed by the cells; the rest collects around the food. In practice this means that the food loses a large degree of its moisture.

You can tell if this has happened by the amount of liquid around the food.

If food is frozen quickly, the cells have less time to lose moisture, so they shrink less. As there is not so much moisture loss, it is easier for the food to reabsorb it during the defrosting process, and very little water collects around the defrosted food.

- **Storing frozen food**

When buying frozen food to store in your freezer compartment, check

- ✓ that the packaging is not damaged,
- ✓ the use-bydate,
- ✓ And the temperature at which the frozen food is being stored in the shop. The length of time it can be kept is reduced if it has been stored at a temperature warmer than -18°C.

Buy frozen food once you have finished the rest of your shopping, and wrap it in newspaper or use a cool bag or cool box to transport it.

Store it in the freezer compartment as soon as possible.

Never re-freeze partially or fully defrosted food. Consume defrosted food as soon as possible as it will lose its nutritional value and spoil if left for too long. Defrosted food may only be re-frozen after it has been cooked.

- **Home freezing**

- Only freeze fresh food which is in a good condition.
- Hints on home freezing

The following types of food are suitable for freezing:

- Fresh meat, poultry, game, fish, vegetables, herbs, fresh fruit, dairy products, pastry, leftovers, egg yolks, egg whites and a range of pre-cooked meals.

The following types of food are not suitable for freezing:

- Grapes, lettuce, radishes, sour cream, mayonnaise, and eggs in their shells, onions, whole raw apples and pears.
- To retain colour, taste and vitamin C, vegetables should be blanched after they have been trimmed and washed. To blanch: bring a large saucepan of water to the boil and immerse the vegetables in the fast boiling water for 2 - 3 minutes, depending on variety. Remove, and plunge into ice-cold water to cool quickly. Drain and pack ready for freezing.
- Lean meat freezes better than fatty meat, and can be stored for considerably longer.
- To prevent chops, steaks, cutlets or rolled meat from freezing together in solid blocks when packed, separate with a sheet of plastic freezer film.
- Do not season fresh food or blanched vegetables before freezing. Only season cooked food lightly before freezing, but care should be taken as the taste of some spices alters when frozen.
- Do not place hot food or drinks in the freezer compartment. This causes already frozen food to thaw, and increases the energy consumption considerably. Allow hot food and drinks to cool down before placing them in the freezer compartment.

2.5 Packaging

- Freeze food in portions.

a. Suitable packing material

- Plastic freezer film
- Freezer bags
- Freezer containers
- Aluminium foil



b. Unsuitable packing material

- Wrapping paper
- Grease-proof paper
- Cellophane
- Bin liners
- Plastic carrier bags

- c. **Expel as much air as possible from bags etc. before sealing them, to prevent freezer-burn on food.**

d. Close the packaging tightly with

- Rubber bands
- Plastic clips
- String or bag ties
- Freezer tape.

Freezer bags may also be sealed using home heat-sealing kits.

- e. **Make a note of the contents and the date of freezing on the packaging.**

f. Before placing food in the freezer compartment

- g. Select a middle to low temperature (5°C or colder) for approx. 4 hours before placing fresh food in the freezer compartment. This helps food that is already in the freezer compartment to stay frozen.

h. Placing food in the freezer compartment

- Make sure that the packaging and containers are dry to prevent them sticking together when frozen.
- Place the food flat on the bottom of the freezer compartment so that it freezes through to the core as quickly as possible.

i. Approx. 24 hours after placing fresh food in the freezer compartment

- The freezing process is complete.
- Select the temperature you want for the refrigerator.

2.6 Defrosting

Frozen food can be defrosted in different ways:

- ✓ in a micro wave oven,
- ✓ in an oven using the "Fan" or "Defrost" setting,

Field Technician – Refrigerator

- ✓ at room temperature,
- ✓ in the refrigerator (the cold given off by the frozen food helps to keep other food cold),
- ✓ in a steam oven.

Make sure that food already frozen does not come into contact with fresh food being frozen as this could cause the frozen food to begin to defrost.

- **Poultry** It is particularly important to observe food hygiene rules when defrosting poultry. Do not use the liquid from defrosted poultry. Pour it away and wash the container it was in, the sink and your hands. Danger of salmonella poisoning.
- Ensure that **meat and fish** (e.g. mince, chicken, and fish fillets) do not come into contact with other foods while defrosting. Catch the liquid and dispose of it carefully.
- **Fruit** should be defrosted at room temperature in its packaging, or in a covered bowl.



2.7 Ice cubes

- Fill the ice tray three quarters full with water and place it on the bottom of the freezer compartment.
- Once frozen, use a blunt instrument, for example a spoon handle, to remove the ice tray from the freezer compartment.
- Ice cubes can be removed easily from the tray by twisting the tray gently or by holding it under cold running water for a short while.

2.8 Cooling Drinks

To cool drinks quickly, place them in the refrigerator section, and switch on the Super cool function.

If placing drinks in the freezer compartment to cool them quickly, **make sure bottles are not left for more than one hour** as they could burst.

Most vegetables can be cooked while still frozen. Just put straight into boiling water or hot fat. The cooking time is slightly less than that of fresh vegetables due to changes in the cell structure.

Never re-freeze partially or fully defrosted food. Consume defrosted food as soon as possible as it will lose its nutritional value and spoil if left for too long. Defrosted food may only be re-frozen after it has been cooked.

Debriefing of the Chapter

- Tube cutter, files, screws, nuts, and wrenches are some of the most essential tools to a field technician.
- Differentiate between the resistors based on their appearance and colour band.
- Diodes give direction the flow of current.
- Timer controls the time of action.

Field Technician – Refrigerator

- Packaging is one of the rudimental actions associated to delivery.
- Every field technician must know installing refrigerators, and setting them up for work.
- Use microwave ovens or stem ovens to defrost the foods stored in a refrigerator.
- Allow the fruits to defrost in room temperature.

Post Session Activity

The Trainer will announce the Trainees to practice on the given topics in the lab.

- Removing the packaging and checking accessories
- Placing the appliance to appropriate location
- Checking the refrigerator's functioning
- Installing a refrigerator
- Setting a Refrigerator Temperature
- Comprehending the symptoms, identify the fault and solution
- Knowing the Top Methods for Accurately Measuring Employee Productivity

NOTES 

Orion Edutech®

ISO 9001:2015 CERTIFIED

Quality Training | Quality Placement



Test Yourself:

- How will you adjust the door shelf inside a refrigerator?
- “Set a low temperature of around 5 degree Celsius before using it.” (State true or false)
- Make sure that food already frozen does not come into contact with fresh food being frozen as this could cause _____.
- “Fruits should be defrosted in a room temperature.” (State true or false)
- Write down the procedure of removing the ice-cubes from the ice-tray.

Refrigerators emit CFC (ChloroFluoro Carbon), which has an adverse effect on the atmosphere. It creates holes in the stratosphere, which lets the harmful ultraviolet ray (UV ray) in. UV ray damages the skin, and can even lead to cancer.