



# **NCERT**

# **SOLUTION'S**

# **(SCIENCE)**

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# **CHAPTER 1**

## **COMPONENTS**

### **OF FOOD**

**1. Name the major nutrients in our food.**

**Ans:**

The major nutrients in our food are carbohydrates, proteins, fats, vitamins and minerals and dietary fibre.

**2. Name the following:**

**(a) The nutrients which mainly give energy to our body.**

**Ans:**

Carbohydrates

**(b) The nutrients that are needed for the growth and maintenance of our body.**

**Ans:**

Proteins and Minerals

**(c) A vitamin required for maintaining good eyesight.**

**Ans:**

Vitamin A

**(d) A mineral that is required for keeping our bones healthy.**

**Ans:**

Calcium

**3. Name two foods each rich in:**

**(a) Fats**

**Ans:**

Butter, ghee, Oil

**(b) Starch**

**Ans:**

Potato, Rice, Wheat

**(c) Dietary fibre**

**Ans:**

Fruits, Vegetables and Whole meal flour.

**(d) Protein**

**Ans:**

Milk, Cheese, Pulses (Dal).

**4. Tick (T) the statements that are correct.**

**(a) By eating rice alone, we can fulfill nutritional requirement of our body. (F)**

**(b) Deficiency diseases can be prevented by eating a balanced diet. (T)**

**(c) Balanced diet for the body should contain a variety of food items. (T)**

**(d) Meat alone is sufficient to provide all nutrients to the body. (F)**

**5. Fill in the blanks.**

**(a) **Rickets** is caused by deficiency of Vitamin D.**

**(b) Deficiency of Vitamin B1 causes a disease known as **beriberi**.**

**(c) Deficiency of Vitamin C causes a disease known as **Scurvy**.**

**(d) Night blindness is caused due to deficiency of Vitamin A in our food.**

## **CHAPTER 2**

### **SORTING**

# **MATERIALS INTO**

## **GROUPS**

**1. Name five objects which can be made from wood.**

**Ans:**

Table, Chair, Door, Desk and Cabinet.

**2. Select those objects from the following which shine:**

**Glass bowl, plastic toy, steel spoon, cotton shirt**

**Ans:**

Glass Bowl and steel spoon.

**3. Match the objects given below with the materials from which they could be made. Remember, an object could be made from more than one material and a given material could be used for making many objects.**

<b>Objects</b>	<b>Materials</b>
<b>Book</b>	<b>Glass</b>
<b>Tumbler</b>	<b>Wood</b>
<b>Chair</b>	<b>Paper</b>
<b>Toy</b>	<b>Leather</b>
<b>Shoes</b>	<b>Plastics</b>

**Ans:**

<b>Objects</b>	<b>Materials</b>
Book	Paper, Wood
Tumbler	Glass, Wood, Plastics
Chair	Wood, Plastics
Toy	Plastics, Paper, Leather, Wood
Shoes	Leather, Plastic

**4. State whether the statements given below are True or False.**

**(i) Stone is transparent, while glass is opaque. False**

**(ii) A notebook has lustre while eraser does not. False**

**(iii) Chalk dissolves in water. False**

**(iv) A piece of wood floats on water. True**

**(v) Sugar does not dissolve in water. False**

**(vi) Oil mixes with water. False**

**(vii) Sand settles down in water. True**

**(viii) Vinegar dissolves in water. True**

**5. Given below are the names of some objects and materials:**

**Water, basketball, orange, sugar, globe, apple and earthen pitcher**

**Group them as:**

**(a) Round shaped and other shapes**

**Ans:**

Round shaped: - basketball, orange, globe, apple and earthen pitcher

Other shapes: - Water and sugar

**(b) Eatables and non-eatables**

Eatables: - Water, orange, sugar and apple.

Non-eatables: - basketball, globe, apple and earthen pitcher.

**6. List all items known to you that float on water.  
Check and see if they will float on an oil or kerosene.**

**Ans:**

Wood, Cork, Plastic bottle, Thermocol's Piece etc. They will not float on an oil or kerosene.

**7. Find the odd one out from the following:**

**a) Chair, Bed, Table, Baby, Cupboard**

**Ans:**

Baby

**b) Rose, Jasmine, Boat, Marigold, Lotus**

**Ans:**

Boat

**c) Aluminium, Iron, Copper, Silver, Sand**

**Ans:**

Sand

**d) Sugar, Salt, Sand, Copper sulphate**

**Ans**

Sand

# **CHAPTER 3**

# **SEPARATION OF**

# **SUBSTANCES**

**1. Why do we need to separate different components of a mixture? Give two examples.**

**Ans:**

In our daily life we need to separate different components of a mixture. We see that, before we use a substance, we need to separate harmful or non-useful substances that may be mixed with it.

Sometimes, we separate even useful components if we need to use them separately.

The substances to be separated may be particles of different sizes or materials and many different properties.

Examples: 1. Tea leaves are separated from the liquid with a strainer, while preparing tea.

2. Grain is separated from stalks, while harvesting.

**2. What is winnowing? Where is it used?**

**Ans:**

Winnowing is the method of separating husk from grains with the help of wind.

Winnowing is used to separate heavier and lighter components of a mixture by wind or by blowing air. This method is commonly used by

farmers to separate lighter husk particles from heavier seeds of grain. Winnowing is done by using a winnowing basket.

### **3. How will you separate husk or dirt particles from a given sample of pulses before cooking?**

**Ans:**

Husk or dirt particles from the pulses can be separated by the process of Winnowing.

### **4. What is sieving? Where is it used?**

**Ans:**

Sieving is used to separate those solid mixtures which have components of different sizes. The mixture having components of different sizes is put in a sieve and the sieve is moved back and forth continuously. The smaller particles of the mixture pass through the holes of the sieve and collect in a vessel kept below. The bigger particles of the mixture cannot pass through the small holes of the sieve and remain behind in the sieve.

The sieving removes pieces of stones, stalk and husk that may still remain with wheat after threshing and winnowing. Sieves also being used at construction sites.

### **5. How will you separate sand and water from their mixture?**

**Ans:**

The sand and water mixture is taken in a beaker.

Allow the mixture of sand and water to stand undisturbed for some time.

On keeping, the heavier sand particles will settle down at the bottom of the beaker.

When the sand settles down, clear water is left above the layer of sand pour the clear water into another beaker gently with the help of a glass rod, without disturbing the sediment of sand. This process is called decantation.

**6. Is it possible to separate sugar mixed with wheat flour? If yes, how will you do it?**

**Ans:**

Sugar can be separated from wheat flour by the process of sieving. Due to difference in the size of particles, sugar will remain on sieve and wheat flour will pass through it.

**7. How would you obtain clear water from a sample of muddy water?**

**Ans:**

The muddy water is taken in a beaker.  
Allow mud to settle down at the bottom of the beaker.  
When all the suspended clay particles settle down, the water becomes clear.  
Slowly pour the clear water into another container.

**8. Fill up the blanks**

**(a) The method of separating seeds of paddy from its stalks is called **Threshing**.**

**(b) When milk, cooled after boiling, is poured onto a piece of cloth the cream (malai) is left behind on it. This process of separating cream from milk is an example of **Filtration**.**

**(c) Salt is obtained from seawater by the process of **Evaporation**.**

**(d) Impurities settled at the bottom when muddy water was kept overnight in a bucket. The clear water was then poured off from the top. The process of separation used in this example is called Decantation.**

**9. True or false?**

**(a) A mixture of milk and water can be separated by filtration. False**

**(b) A mixture of powdered salt and sugar can be separated by the process of winnowing. False**

**(c) Separation of sugar from tea can be done with filtration. False**

**(d) Grain and husk can be separated with the process of decantation. False**

**10. Lemonade is prepared by mixing lemon juice and sugar in water. You wish to add ice to cool it. Should you add ice to the lemonade before or after dissolving sugar? In which case would it be possible to dissolve more sugar?**

**Ans:**

Ice can be added to lemonade only after dissolving sugar. We can dissolve more sugar before adding ice.

# **CHAPTER 4**

## **GETTING TO**

### **KNOW PLANTS**

**1. Correct the following statements and rewrite them in your notebook.**

**(a) Stem absorbs water and minerals from the soil.**

**Ans:**

Roots absorb water and minerals from the soil.

**(b) Leaves hold the plant upright.**

**Ans:**

Stem holds the plant upright.

**(c) Roots conduct water to the leaves.**

**Ans:**

Stems conduct water to the leaves.

**(d) The number of petals and stamens in a flower is always equal.**

**Ans:**

The number of petals and stamens in a flower are not always equal.

**(e) If the sepals of a flower are joined together, its petals are also joined together.**

**Ans:**

If the sepals of a flower are joined together, its petals are separate.

**(f) If the petals of a flower are joined together, then the pistil is joined to the petal.**

**Ans:**

If the petals of a flower are joined together, then the pistil may or may not be joined to the petal.

**2. Draw (a) a leaf, (b) a taproot and (c) a flower, you have studied for Table 4.3.**

**Ans.**

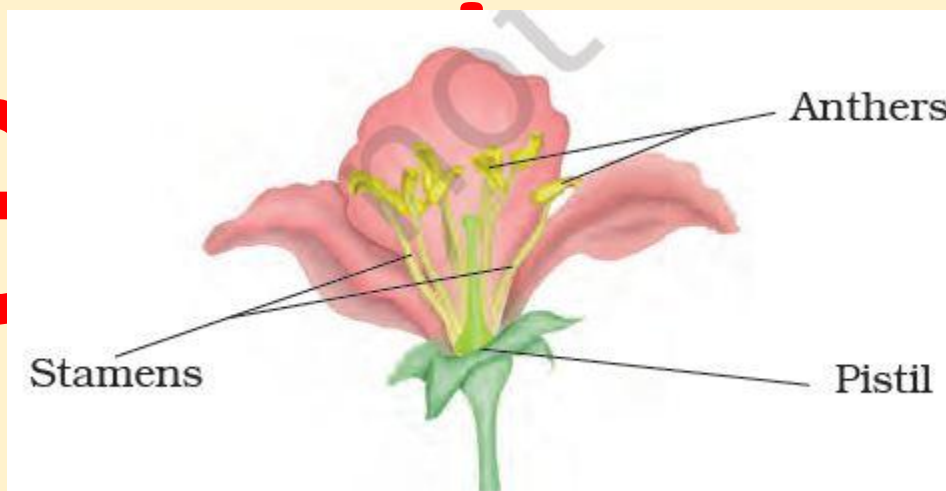
(a) Leaf



(b) Tap Root



(c) Flower



**3. Can you find a plant in your house or in your neighborhood, which has a long but weak stem? Write its name. In which category will you place it?**

**Ans:**

Pea plant; Bitter gourd have long but weak stem. They all are Climbers.

**4. What is the function of a stem?**

**Ans:**

(i) The stem holds the plant upright

(ii) It carries water and minerals from the roots to the leaves and other parts of the plant.

(iii) It carries the prepared food from the leaves to other parts of the plant.

(iv) They holds the leaves in such a way that the leaves are able to get plenty of sunlight for preparing food by photosynthesis.

**5. Which of the following leaves have reticulate venation?**

**Wheat, tulsi, maize, grass, coriander (dhania), China rose**

**Ans:**

Tulsi, China Rose, Coriander (dhania).

**6. If a plant has fibrous root, what type of venation do its leaves have?**

**Ans:**

Parallel venation

**7. If a plant has leaves with reticulate venation, what kind of roots will it have?**

**Ans:**

Tap Root

**8. Is it possible for you to find out whether a plant has taproot or fibrous roots by looking at the impression of its leaf on a sheet of paper?**

**Ans:**

Yes, it is possible to find out whether a plant has taproot or fibrous roots by looking at the impression of its leaf on a sheet of paper.

### **9. What are the parts of a flower?**

**Ans:**

The main parts of a flower are: Sepals, Petals, Stamen and Pistil.

### **10. From the following plants, which of them have flowers?**

**Grass, maize, wheat, chilli, tomato, tulsi, peepal, shisham, banyan, mango, jamun, guava, pomegranate, papaya, banana, lemon, sugarcane, potato, groundnut**

**Ans:**

Grass, maize, wheat, chilli, tomato, tulsi, peepal, shisham, banyan, mango, jamun, guava, pomegranate, papaya, banana, lemon, sugarcane, potato, groundnut.

### **11. Name the part of plant which produces food.**

**Name the process.**

**Ans:**

Leaves produce food for the plant. This process is called Photosynthesis.

### **12. In which part of a flower, you will find the ovary?**

**Ans:**

We find ovary in pistil.

### **13. Name two plants in which one has joined sepals and the other has separate sepals.**

**Ans:**

Two plants in which flower with joined sepal  
Datura, cotton

Two plants in which flower with separate sepal  
Rose and Mustard

# CHAPTER 5

## BODY

## MOVEMENTS

### **1. Fill in the blanks:**

**(a) Joints of the bones help in the movement of the body.**

**(b) A combination of bones and cartilages forms the skeletons of the body.**

**(c) The bones at the elbow are joined by a hinge joint.**

**(d) The contraction of the **muscles** pulls the bones during movement.**

**2. Indicate true (T) and false (F) among the following sentences.**

**(a) The movement and locomotion of all animals is exactly the same. (False)**

**(b) The cartilages are harder than bones. (False)**

**(c) The finger bones do not have joints. (False)**

**(d) The fore arm has two bones. (True)**

**(e) Cockroaches have an outer skeleton. (True)**

**3. Match the items in Column I with one or more items of Column II.**

<b>Column I</b>	<b>Column II</b>
<b>Upper jaw</b>	<b>Have fins on the body</b>
<b>Fish</b>	<b>Has an outer skeleton</b>
<b>Ribs</b>	<b>Can fly in the air</b>
<b>Snail</b>	<b>is an immovable joint</b>
<b>Cockroach</b>	<b>protect the heart</b>
	<b>shows very slow movement</b>

	<b>have a streamlined body</b>
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**Ans:**

<b>Column I</b>	<b>Column II</b>
Upper jaw	is an immovable joint
Fish	Have fins on the body, have a streamlined body
Ribs	protect the heart
Snail	shows very slow movement
Cockroach	Has an outer skeleton, Can fly in the air

**4. Answer the following:**

**(a) What is a ball and socket joint?**

**Ans:**

One end of the bone has a round shape like a ball' which fits into a 'socket in the other bone.

The bones can be turned in any direction: forwards and backwards, side to side, and even rotated.

The shoulder joints and hip joints are ball and socket joints.

**(b) Which of the skull bones are movable?**

**Ans:**

Lower Jaw

**(c) Why can our elbow not move backwards?**

**Ans:**

Our Elbow cannot move because a hinge joint allows the movement of bones in only one direction forwards and backwards.

# CHAPTER 6

## THE LIVING ORGANISMS — CHARACTERISTICS AND HABITATS

**1. What is a habitat?**

**Ans:**

The surroundings where organisms live is called a habitat. Habitat means a dwelling place.

It provides food, water, air, light, shelter, and a place for breeding to the plants and animals living in it.

Examples: Deserts, Mountain regions, Forests, Grasslands, Garden, Fields, Soil, Homes, Tree, Pond, Lake, River, Ocean and Sea-shore.

## **2. How are cactus adapted to survive in a desert?**

**Ans:**

The plants in deserts have developed special features for surviving in hot and dry areas of desert.

Desert plants lose very little water through transpiration. The leaves in desert plants are either absent, very small, or they are present in the shape of spines. This helps in reducing loss of water from the leaves through transpiration.

Photosynthesis in these plants is usually carried out by the stems. The stem is also covered with a thick waxy layer, which helps to retain water. Most desert plants have roots that go very deep into the soil for absorbing water.

## **3. Fill up the blanks**

**(a) The presence of specific features, which enable a plant or an animal to live in a particular habitat, is called **Adaptation**.**

**(b) The habitats of the plants and animals that live on land are called **terrestrial habitat**.**

**(c) The habitats of plants and animals that live in water are called **aquatic habitat**.**

**(d) Soil, water and air are the **Abiotic factors** of a habitat.**

**(e) Changes in our surroundings that make us respond to them, are called **Stimuli**.**

**4. Which of the things in the following list are nonliving?**

**Plough, Mushroom, Sewing machine, Radio, Boat, Water hyacinth, Earthworm**

**Ans:**

Plough, Sewing Machine, Radio, Boat, Water are all non-living.

**5. Give an example of a non-living thing, which shows any two characteristics of living things.**

**Ans:**

An example of a non-living thing, which shows characteristics of living things is cloud.

Characteristics

It grows in size.

It shows movement.

**6. Which of the non-living things listed below, were once part of a living thing?**

**Butter, Leather, Soil, Wool, Electric bulb, Cooking oil, Salt, Apple, Rubber**

**Ans:**

Butter, Leather, Wool, Cooking oil, Salt, Apple, Rubber.

**7. List the common characteristics of the living things.**

**Ans:**

1. Living things need food, air and water.
2. Living things show growth.
3. Living things respire.
4. Living things respond to stimuli.
5. Living organisms excrete.
6. Living things reproduce their own kind.
7. Living things move.

**8. Explain, why speed is important for survival in the grasslands for animals that live there.**

**Ans:**

The speed is important for survival in the grasslands for animals that live there as it helps them to run away from the predators.

# CHAPTER 7

## MOTION

## AND

## MEASUREMENT OF DISTANCES

**1. Give two examples each, of modes of transport used on land, water and air.**

**Ans:**

Land: Bus, Train

Water: Boat, Ship

Air: Aeroplane, Helicopter

**2. Fill in the blanks:**

**(i) One metre is 100 cm.**

**(ii) Five kilometre is 5000 m.**

**(iii) Motion of a child on a swing is Periodic.**

**(iv) Motion of the needle of a sewing machine is Periodic.**

**(v) Motion of wheel of a bicycle is Circular.**

**3. Why can a pace or a footstep not be used as a standard unit of length?**

**Ans:**

A pace or a footstep not be used as a standard unit of length because footstep of every person is not same.

**4. Arrange the following lengths in their increasing magnitude:**

**1 metre, 1 centimetre, 1 kilometre, 1 millimetre.**

**Ans:**

1 millimetre < 1 centimetre < 1 metre < 1 kilometre.

**5. The height of a person is 1.65 m. Express it into cm and mm.**

**Ans:**

Height of a person is 1.65 m

1m = 100cm

1.65m = 1.65 x 100 = 165cm.

1cm = 10mm

165cm = 165 x 10 = 1650mm.

**6. The distance between Radha's home and her school is 3250 m. Express this distance into km.**

**Ans:**

Distance between Radha's home and her school = 3250 m

(in km) =  $\frac{3250}{1000}$  = 3km250m or 3.250km

**7. While measuring the length of a knitting needle, the reading of the scale at one end is 3.0 cm and at the other end is 33.1 cm. What is the length of the needle?**

**Ans:**

Length of needle =  $33.1 - 3.0 = 30.1\text{cm}$

**8. Write the similarities and differences between the motion of a bicycle and a ceiling fan that has been switched on.**

**Ans:**

(i) Similarity: Both the wheel of a bicycle and a ceiling fan shows periodic motion.

(ii) Difference: Bicycle moves forward in a straight line path that shows rectilinear motion but fan does not show such motion.

**9. Why would you not like to use a measuring tape made of an elastic material like rubber to measure distance? What would be some of the problems you would meet in telling someone about a distance you measured with such a tape?**

**Ans.**

An elastic measuring tape gives wrong length of the distance between two points because

Elastic tape gives different result every time depending on the force that we had applied to stretch the tape. Length may also vary from person to person.

**10. Give two examples of periodic motion.**

**Ans.**

A branch of a tree moving to and fro, motion of a child on a swing, strings of a guitar or the membrane of drums (tabla) being played, are all examples of periodic motion.

# CHAPTER 8

## LIGHT,

## SHADOWS AND

## REFLECTIONS

**1. Rearrange the boxes given below to make a sentence that helps us understand opaque objects.**

OWS   AKE   OPAQ   UE O   BJEC   T SM  
SHAD

**Ans.**

OPAQ   UE O   BJEC   TSM   AKE   SHAD   OWS

**2. Classify the objects or materials given below as opaque, transparent or translucent and luminous or non-luminous:**

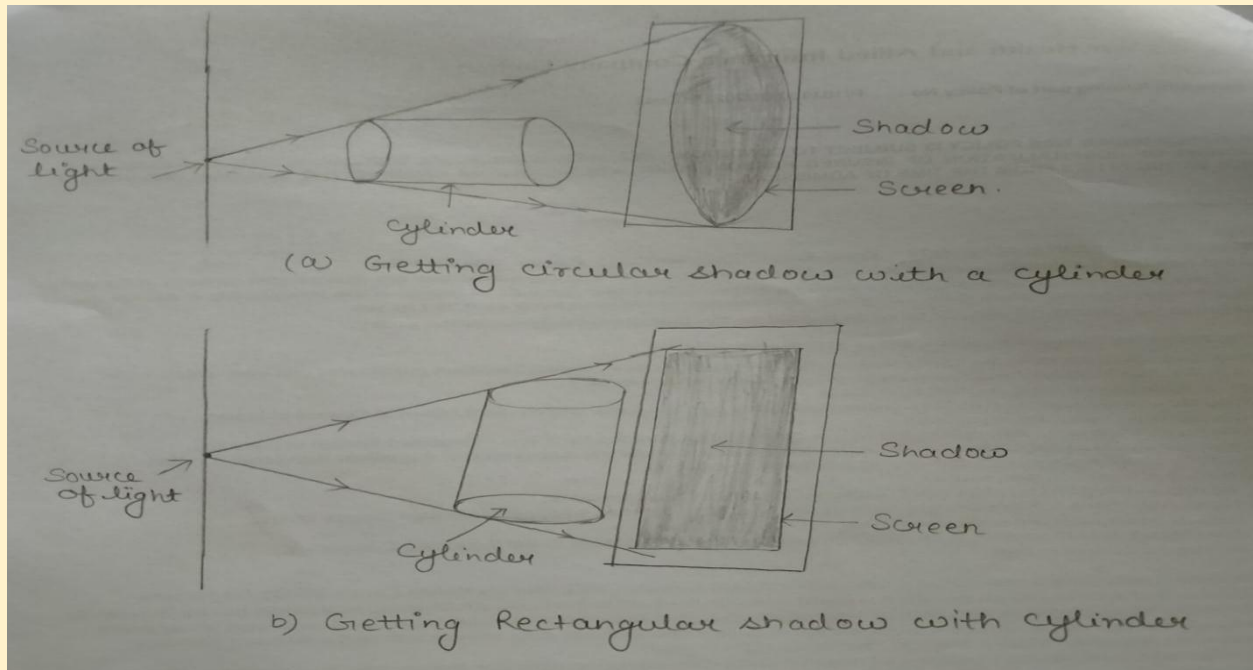
**Air, water, a piece of rock, a sheet of aluminium, a mirror, a wooden board, a sheet of polythene, a CD, smoke, a sheet of plane glass, fog, a piece of red hot iron, an umbrella, a lighted fluorescent tube, a wall, a sheet of carbon paper, the flame of a gas burner, a sheet of cardboard, a lighted torch, a sheet of cellophane, a wire mesh, kerosene stove, sun, firefly, moon.**

<b>objects or Materials</b>	<b>opaque</b>	<b>transparent</b>	<b>translucent</b>	<b>luminous</b>	<b>Non luminous</b>
Air	-	Yes	-	-	Yes
Water	-	Yes	-	-	Yes
A piece of rock	Yes	-	-	-	Yes
A sheet of Aluminium	Yes	-	-	-	Yes
A mirror	Yes	-	-	-	Yes
A wooden board	Yes	-	-	-	Yes
A sheet of polythene	-	-	Yes	-	Yes
A CD	Yes	-	-	-	-
smoke	-	-	Yes	-	Yes
A sheet of plane glass	-	Yes	-	-	Yes
Fog	-	-	Yes	-	Yes

A piece of red hot iron	Yes	-	-	Yes	Yes
An umbrella	Yes	-	-	-	Yes
A lighted fluorescent tube	Yes	-	-	Yes	-
A wall	Yes	-	-	-	Yes
A sheet of carbon paper	Yes	-	-	-	Yes
A lighted torch	Yes	-	-	Yes	-
A sheet of cellophane	-	Yes	-	-	Yes
A wire mesh	-	-	-	-	Yes
Kerosene stove	Yes	-	-	Yes	-
Sun	Yes	-	-	Yes	-
Firefly	Yes	-	-	Yes	-
Moon	Yes	-	-	-	Yes

**3. Can you think of creating a shape that would give a circular shadow if held in one way and a rectangular shadow if held in another way?**

**Ans.**



**4. In a completely dark room, if you hold up a mirror in front of you, will you see a reflection of yourself in the mirror?**

**Ans.**

No, in a completely dark room no image will be formed because there is no light in the room so no reflection of light takes place.

# CHAPTER 9

## ELECTRICITY

### AND

### CIRCUITS

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#### **1. Fill in the blanks:**

**(a) A device that is used to break an electric circuit is called **Switch**.**

**(b) An electric cell has **two** terminals.**

#### **2. Mark 'True' or 'False' for following statements:**

**(a) Electric current can flow through metals. **True****

**(b) Instead of metal wires, a jute string can be used to make a circuit. False**

**(c) Electric current can pass through a sheet of thermo Col.**  
**False**

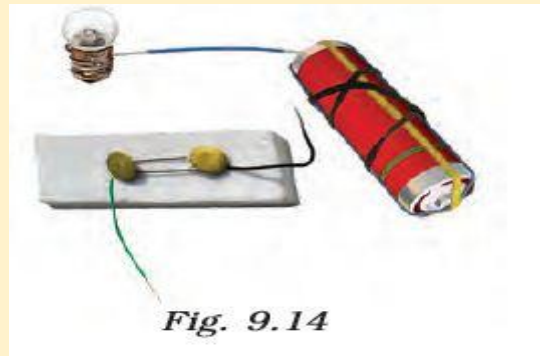
**3. Explain why the bulb would not glow in the arrangement shown in Fig. 9.13.**



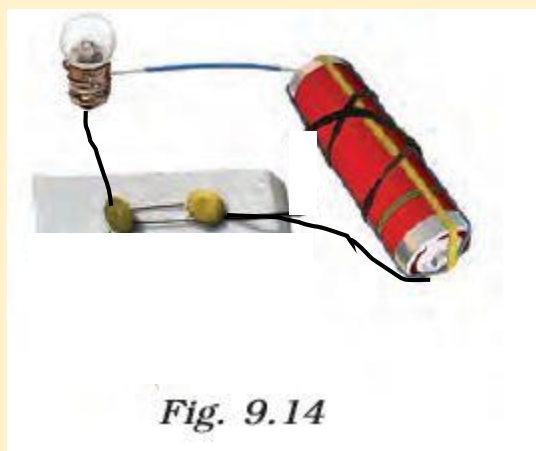
**Ans.**

Bulb will not glow. Since circuit is broken because of insulator (ie screw driver) is in the middle.

**4. Complete the drawing shown in Fig. 9.14 to indicate where the free ends of the two wires should be joined to make the bulb glow.**



**Ans.**



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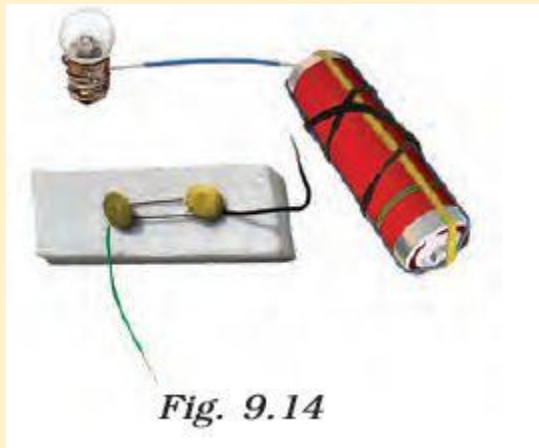
**5. What is the purpose of using an electric switch?  
Name some electrical gadgets that have switches  
built into them.**

**Ans.**

A switch is a simple device to complete and break the circuit. Switch turns 'on' or 'off' electricity in the circuit.

All electrical appliances had switch fan, toaster, iron, bulb etc had electric switches.

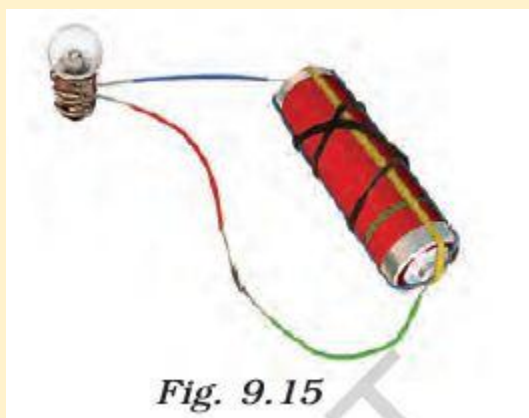
**6. Would the bulb glow after completing the circuit shown in Fig. 9.14 if instead of safety pin we use an eraser?**



**Ans.**

No, bulb will not glow because eraser is an insulator.

**7. Would the bulb glow in the circuit shown in Fig. 9.15?**



**Ans.**

No bulb will not glow.

**8. Using the "conduction tester" on an object it was found that the bulb begins to glow. Is that object a conductor or an insulator? Explain.**

**Ans.**

An object 'conduction tester' is a conductor so bulb will definitely glow. If any insulator was used then bulb won't glow.

**9. Why should an electrician use rubber gloves while repairing an electric switch at your home? Explain.**

**Ans.**

Electricians generally wear rubber gloves while undertaking electrical repairs on line because of safety purpose. Electricity can be dangerous if not handled properly. Carelessness in handling electricity and electric devices can cause severe injuries and sometimes even death.

**10. The handles of the tools like screwdrivers and pliers used by electricians for repair work usually have plastic or rubber covers on them. Can you explain why?**

**Ans.**

Screw- driver, pliers (plaas), a cable-cutter and the tools used for electrical operations by the electricians are covered with a covering (coating) of plastic or any other insulator. This is for the safety purpose. Plastic is an insulator which protect electrician from electric shock while handling electricity and electric devices.

# CHAPTER 10

## FUN WITH

## MAGNETS

**1. Fill in the blanks in the following:**

**(i) Artificial magnets are made in different shapes such as bar magnet, horse shoe and Cylindrical.**

**(ii) The Materials which are attracted towards a magnet are called Magnetic material.**

**(iii) Paper is not a magnetic material.**

**(iv) In olden days, sailors used to find direction by suspending a piece of magnet**

**(v) A magnet always has two poles.**

**2. State whether the following statements are true or false:**

**(i) A cylindrical magnet has only one pole. False**

**(ii) Artificial magnets were discovered in Greece. False**

**(iii) Similar poles of a magnet repel each other. True**

**(iv) Maximum iron filings stick in the middle of a bar magnet when it is brought near them. False**

**(v) Bar magnets always point towards North-South direction. True**

**(vi) A compass can be used to find East-West direction at any place. True**

**(vii) Rubber is a magnetic material. False**

**3. It was observed that a pencil sharpener gets attracted by both the poles of a magnet although its body is made of plastic. Name a material that might have been used to make some part of it.**

**Ans.**

Iron might have been used to make some part of it.

**4. Column I shows different positions in which one pole of a magnet is placed near that of the other. Column II indicates the resulting action between them for each situation. Fill in the blanks.**

Column I	Column II
N- N	_____
N- _____	Attraction
S- N	_____
____ -N	Repulsion

**Ans.**

Column I	Column II
N- N	Repulsion
N- S	Attraction
S- N	Attraction
S- S	Repulsion

**5. Write any two properties of a magnet.**

**Ans.**

1. Magnet had a property of attracting things made of any of the three metals such as iron, cobalt and nickel.
2. Opposite poles attract each other.

**6. Where are poles of a bar magnet located?**

**Ans.**

The two ends of a magnet are called poles of the bar magnet.

**7. A bar magnet has no markings to indicate its poles. How would you find out near which end is its north pole located?**

**Ans.**

When we hang a bar magnet with the help of thread. End that pointed towards the north is a north pole of the bar magnet.

**8. You are given an iron strip. How will you make it into a magnet?**

**Ans.**

There are several methods of making magnets.

Take a rectangular piece of iron. Place it on the table.

Now take a bar magnet and place one of its poles near one edge of the bar of iron. Without lifting the bar magnet, move it along the length of the iron bar till you reach the other end.

Now, lift the magnet and bring the pole (the same pole you started with) to the same point of the iron bar from which you began.

Move the magnet again along the iron bar in the same direction as you did before. Repeat this process about 30-40 times.

Bring a pin or some iron filings near the iron bar to check whether it has become a magnet. If not, continue the process for some more time.

**9. How is a compass used to find directions?**

**Ans.**

Magnetic compass is device which is used to locate the direction of a place. It always rests in a North -South direction.

**10. A magnet was brought from different directions towards a toy boat that has been floating in water in a tub. Affect observed in each case is stated in Column I. Possible reasons for the observed affects are mentioned in Column II. Match the statements given in Column I with those in Column II.**

<b>Column I</b>	<b>Column II</b>
<b>Boat gets attracted towards the magnet pole towards its head</b>	<b>Boat is fitted with a magnet with north pole towards its head.</b>
<b>Boat is not affected by the magnet</b>	<b>Boat is fitted with a magnet with south pole towards its head</b>
<b>Boat moves towards the magnet if north pole of the magnet is brought near its head</b>	<b>Boat has a small magnet fixed along its length</b>
<b>Boat moves away from the magnet when north pole is brought near its head</b>	<b>Boat is made of magnetic material</b>
<b>Boat floats without changing its direction</b>	<b>Boat is made up non-magnetic material</b>

**Ans.**

Column I	Column II
Boat gets attracted towards the magnet pole towards its head	Boat is made of magnetic material
Boat is not affected by the magnet	Boat is made up non-magnetic material
Boat moves towards the magnet if north pole of the magnet is brought near its head	Boat is fitted with a magnet with south pole towards its head
Boat moves away from the magnet when north pole is brought near its head	Boat is fitted with a magnet with north pole towards its head.
Boat floats without changing its direction	Boat has a small magnet fixed along its length

## **CHAPTER 11**

### **WATER**

#### **1. What is the composition of air?**

**Ans.**

Air is a mixture of many gases. Various Components are Nitrogen, Oxygen, Carbon dioxide, water vapour, dust and smoke.

## **2. Which gas in the atmosphere is essential for respiration?**

**Ans.**

Oxygen in atmosphere is essential for respiration.

## **3. How will you prove that air supports burning?**

**Ans.**

- I. Fix two small candles of the same length on a table. Light both the candles. Cover one of the candles with an inverted glass tumbler.
- II. Candle covered with glass tumbler got extinguished after some time, whereas the other candle continued burning.
- III. It seems that the candle got extinguished because the component inside of the glass tumbler, which supports burning, is limited. However, the other candle is getting continued supply of air. This component of air, which supports burning.

## **4. How will you show that air is dissolved in water?**

**Ans.**

Take some water in a glass or metal container. Heat it slowly on a tripod stand. Let the water begins to boil, look carefully at the inner surface of the container. Tiny bubbles on the inside. These bubbles come from the air dissolved in water. When you heat the water, to begin with, the air dissolved in it escapes. As you continue heating, the water itself turns into vapour and finally begins to boil. This experiment concludes that air is present in the water.

## **5. Why does a lump of cotton wool shrink in water?**

**Ans.**

A lump of cotton wool shrink in water because water filled up the empty space that the air has occupied.

## **6. The layer of air around the earth is known as**

**Atmosphere.**

**7. The component of air used by green plants to make their food, is Carbon dioxide.**

**8. List five activities that are possible due to the presence of air. The five activities that are possible due to air are as follows:**

**Ans.**

Five activities that are possible due to the presence of air  
Photosynthesis, Respiration, Cloud formation, Winnowing and Transpiration

**9. How do plants and animals help each other in the exchange of gases in the atmosphere?**

**Ans.**

Plants make their own food and oxygen is produced along with it. It is obvious that animals cannot live without plants. The balance of oxygen and carbon dioxide in the atmosphere is maintained through respiration in plants and animals and by the photosynthesis in plants. This shows the interdependence of plants and animals.