

**Chapter – 5**  
**Separation of Substances**  
**Assignment**

**1 Mark Questions :-**

1. Name the method used to separate:-

- a. Cream from Curd.
- b. Mixture of Mango and Apple
- c. Pieces of stone from grain
- d. Grains from stalk
- e. Heavier and lighter components
- f. Solid materials of different sizes
- g. Salt from ocean water.

a. Centrifugation

b. Handpicking

c. Handpicking

d. Threshing

e. Winnowing

f. Sieving

g. Evaporation

2. What is a strainer?

Strainer is a kind of sieve which is used to separate a liquid from solid.

3. What is evaporation?

The process of conversion of liquid into vapour is called evaporation. For ex.

Water changes into water vapour on heating.

4. Define condensation.

The process of conversion of vapour into liquid is called condensation. For ex.

Water vapour changes into water on cooling.

5. Write opposite process of evaporation.

condensation.

6. What is a mixture?

When two or more than two substances are mixed together in any ratio then it is called a mixture. For ex. – Mixture of rice and dal.

7. Write various methods of separation of components from their mixture.

Various methods of separation of components from their mixture are :-

- |                |                  |
|----------------|------------------|
| a. Handpicking | e. Condensation  |
| b. Winnowing   | f. Sedimentation |
| c. Threshing   | g. Decantation   |
| d. Evaporation | h. Filtration    |

### 2 Marks Questions :-

8. Define the following terms:-

- a. Handpicking
- b. Threshing
- c. Winnowing
- d. Sieving
- e. Decantation
- f. Saturated solution
- g. Filtration

a. Handpicking - The process used to separate slightly larger particles from a mixture by hand is called handpicking. For Ex. Stone pieces can be separated from wheat or rice by handpicking.

b. Threshing - Threshing is a process in which we separate grain from stalks. This process is used by farmers to separate gram , wheat , rice , mustard seeds in his field.

c. Winnowing – The process which is used to separate components from a mixture in which one component is heavier or lighter than other is called winnowing. winnowing is done with the help of wind or by blowing air.

d. Sieving – Sieving allows the fine flour particles to pass through the holes of the sieve while the bigger particles or impurities remain on the sieve. For example, in a flour mill, impurities like husk and stone are removed from weed before grinding it.

e. Decantation- Decantation is the process, of separation of insoluble solids from liquids. The suspension of solid particles in liquid is allowed to stand for some time. The solid particles then settle down at the bottom of the container and clean water goes up. Without disturbing the settled particles the clean water is transferred into other container

f. Saturated solution- The solution in which no more solute can be added is called a saturated solution.

g. Filtration- Process of separation of solid from fluids by passing the same through a porous medium (filter paper )that retains the solid but allows the fluid to pass through.

9. How will you separate oil and water from their mixture?

Oil , being lighter than water , will float on it. Two distinct layers are formed and slowly oil is allowed to flow into another container and is separated from water. Separating funnel can also be used to separate oil and water.

10. How will you prepare cheese ( Paneer )?

For making cheese , a few drops of lemon juice is added to milk as it boils. This gives a mixture of particles of solid paneer and liquid . The paneer is then separated by filtering the mixture through a fine cloth or strainer.

11. Where is decantation used? Give two examples.

Decantation is used to separate insoluble solids or liquid from liquid. Mixture of mud and water can be purified by decantation. Oil and water also get separated by this method because oil floats up.

### 3 Marks Questions :-

12. Describe the method to obtain salt from sea water.

Sea water contain many salt mix into it . One of them is common salt. When sea water is allowed to stand in shallow pits , water gets evaporated by sunlight and slowly turns into water vapour. In a few days , the water evaporates completely leaving behind the solid salts. Common salt is then obtained from this mixture of salts by further purification.

13. Explain the method that can be used for separating the following mixture:

a. Sand and Husk

b. Wheat , sugar and stalk

c. Water and petrol

d. Rice and salt

e. Sand and common salt.

a. Sand and Husk - Winnowing

b. Wheat , sugar and stalk – For separating wheat and stalk - Winnowing

For separating wheat and sugar - Sieving

c. Water and petrol – Petrol does not dissolve in water , so it can be separated by the use of separating funnel.

d. Rice and salt - Sieving

e. Sand and common salt. – Sand and salt is mixed with water , salt dissolve in water and sand can be separated by sedimentation , decantation followed by filtration. Now salt can be separated by the process of evaporation.

14. Explain the process of filtration with diagram.

Muddy water can be separated by filter that has even smaller pores . A filter paper is one such filter that has very fine pores into it. The steps involved in the process of filtration are :-

1. A filter paper is folded in the form of a cone and fixed into a funnel.

2. The mixture is then poured on the filter paper.

3. Mud particles do not pass through it and remain on the filter.

4. Clear water or filtrate can be obtained from beaker.

15. How can we separate grains from stalks?

Grains from stalks can be separated by threshing. .In this process ,the stalks are beaten to free the grain seeds . Threshing can be done with the help of bullocks and machines.

**Chapter – 6**  
**Changes Around Us**  
**Assignment**

1 Mark Questions :-

1. Give two examples of:-

a. Slow change

b. Fast change

c. Reversible changes

d. Irreversible changes

e. Physical changes

f. Chemical changes

a. Slow change – Growing of plants , Ripening of fruits

b. Fast change – Blowing of balloon , Rolling out roti from dough ball

c. Reversible changes – Drying of wet clothes , Heating of milk

d. Irreversible changes – Cooking of food , Milk to cheese

e. Physical changes – Boiling of water , Freezing of water

f. Chemical changes – Rusting of iron , Formation of curd

2. Classify the following as slow or fast change:-

a. Burning of paper

b. Melting of wax

c. Curdling of milk

d. Cooking of food

e . Change of seasons

f. Weathering of rocks.

2. Classify the following as slow or fast change:-

- a. Burning of paper – Fast change
- b. Melting of wax – Slow change
- c. Curdling of milk – Slow change
- d. Cooking of food – Fast change
- e . Change of seasons – Slow change
- f. Weathering of rocks. – Slow change

3. Can you say deforestation is an irreversible or reversible changes?

It is an irreversible change.

### 2 Marks Questions:-

4. Why does a blacksmith heat the metal rim to fix it on a cart wheel?

Ans: A blacksmith heats the metal rim to fix it on a cart wheel because a metal rim is made slightly smaller. On heating, the rim expands and fits onto the wheel. Then on cooling, rim contracts and fits tightly into the wheel.

5. What are slow and fast changes? Give examples.

Ans: The changes which take place in long period of time are called slow changes whereas the changes the take place in short period of time are called fast changes.

Examples:

(a) Rusting of iron, formation of day and night, ripening of fruits and growing of trees are slow changes.

(b) Burning of paper, stretching of rubber band, blowing of balloons and bursting of crackers are fast changes.

6. Write some changes happening in our body.

- a. Our nails grow
- b. Our hair grows
- c. We grow taller

d. Our weight increases

7. What is a physical change ? Explain with example.

The change in which only physical properties of substances are changed and no new substance is formed is called physical change . It is a reversible change . Example boiling and freezing of water.

8. What is a chemical change ? Explain with example.

The change in which new substance with new chemical properties are formed are called chemical changes. Example : Reaction between washing soda and lemon juice in which carbon dioxide and other substances are formed.

9. What happens when sugar is heated?

When sugar is heated continuously then a black powdery substance is formed. This is called a chemical change.

### 3 Marks Questions:-

10. Explain how a metal rim slightly smaller than a wooden wheel can be fixed on it.

The metal rim is always made slightly smaller than the wooden wheel. The metal rim is heated. On heating, the rim expands and fit onto the wheel. Cold water is then poured over the rim. Due to cooling the metal rim contracts and fits tightly onto the wheel.

11. How does curd being set ? Is this change reversible?

A small quantity of curd is added to warm milk. The milk is stirred and is set aside undisturbed for a few hours at a warm place. In a few hours, the milk changes into curd . Curd formed from the milk cannot be changed into milk again. So this is an irreversible change.

12. Define the process of expansion and contraction with examples.

Expansion - An increase in the volume of a substance while its mass remains the same. Expansion is usually due to heating.

Contraction – A decrease in the size of a substance due to cooling .

For ex. – Substances expand or get bigger when they are heated up. They contract or get smaller when they are cooled down.

13. (a) How does a blacksmith change a piece of iron into different tools?

A piece of iron is heated till it becomes red hot. It then becomes soft and is beaten into a desired shape.

13 (b) How the iron blade in the tools is fixed to the wooden handle?

The iron blade in the tools has a ring in which the wooden handle is fixed .Normally the ring is slightly smaller in size than the wooden handle. To fix the handle the ring is heated and it becomes slightly larger in size ( expands). Now the handle easily fits into the ring. When the ring cools down it contract and fits tightly on to the handle.

**Chapter – 7**  
**Getting To Know Plants**  
**Assignment**

1 Mark Questions :-

1. What are the major parts of plants?

Stem , Roots , Leaves , Flowers , buds

2. How many kinds of plants are there?

There are three kinds of plants.

Herbs , Shrubs and Trees.

3. Name two plants belong to

a. Herbs

b. Shrubs

c. Trees

a. Herbs – Tomato , Potato

b. Shrubs – Lemon , Orange

c. Trees – Mango , Neem

4. Define the following terms:-

a. Petiole

b. Lamina

c. Veins

d. midrib

a. Petiole – The part(stalk) of a leaf by which it is attached to the stem is called petiole.

b. Lamina – The broad green flat part of leaf is called lamina.

c. Veins – The lines on the leaf are called veins.

d. midrib – A thick vein in the middle of the leaf is called midrib.

5. What is leaf venation?

The design made by veins in a leaf is called leaf venation.

6. What is transpiration?

The process by which water comes out from the leaves in the form of vapour is called transpiration.

7. Name the process by which leaves can prepare their food.

Photosynthesis.

8. What are the raw materials for photosynthesis?

Sunlight , Water , Carbon dioxide , Chlorophyll

9. What are lateral roots?

The smaller roots that grow on the main tap root are called lateral roots.

10. What are fibrous roots?

The roots which do not have any main root but all the roots are similar are called fibrous roots.

### **2 Marks Questions:-**

11. What are weeds?

The unwanted plants that grow in the fields with the main crops or in their surroundings are called weeds. Weeds are the plants which are not grown by farmers. For example, Grass.

12. What are herbs? Give two examples.

The plants with green and tender stems are called herbs. They are usually short and may have no or less branches. For example, tomato, potato.

13. What are shrubs? Give two examples.

The plant which have a hard but not a very thick stem are called shrubs. Such plants have the stem branching out near the base. For example, Lemon, Rose plants

14. What are trees? Give two examples.

The plants which are very tall and have hard and thick brown stem are called trees. The stems have branches in upper part and much above the ground. For example, Mango, neem.

15. What are creepers? Give example.

The plants with weak stem that cannot stand upright and spread on the ground are called creepers. Various types of grasses are the examples of creepers.

16. What are climbers?

The plants that take support of neighboring structures and climb up are called climbers. They have weak stem. For example, Grapes, Money plant, beans.

17. Explain an activity to show that stem conducts water and other substances.

Take some water in a glass. add few drops of red ink to the water. Cut the stem of a herb plant from its base. Put it in the glass as shown in figure. We will see that some parts of the stem become red. This activity shows that stem conducts water.

18. What are sepals? What are their functions?

The small green coloured leaf – like structures are called sepals. It protect flower when it is in stage of bud.

19. What are petals? Why are they generally coloured?

The coloured big – leaf structures present in flower are called petals. Petals are coloured so as to attract insects for pollination.

20. What are stamens?

When we remove sepals and petals from the flower then we see some filaments in the flower which are called stamens. These are the male part of the flower.

21. Name the prominent parts of a flower. Define the female part of flower.

The prominent parts of a flower are petals , sepals , stamens and pistil. The innermost part of a flower is called pistil. These are the female part of the flower.

### **3 Marks Questions:-**

22. Explain the main functions of a leaf.

Two main functions of a leaf are :-

Transpiration:- The water comes out of the leaves in the form of vapour. This process is called transpiration.

Photosynthesis –The process by which leaves prepare their food from water and carbon dioxide , in the presence of sunlight and a green coloured substance , is called photosynthesis.

23. What are unisexual and bisexual flowers?

Unisexual Flowers - Unisexual Flowers has either male (stamen) or female (pistil) parts. For ex. papaya and cucumber.

Bisexual Flowers - Bisexual Flowers have both male and female whorl in the flowers , i.e. they have both stamen and pistil. For ex. rose and brinjal.

24. Explain various types of leaf venation with examples.

(1) Reticulate venation- If the design of veins make a net like structure on both the sides of midrib then it is called reticulate venation. For example mango leaf, gram leaf.

(2) Parallel venation- If the veins are parallel to each other or to midrib then such type of venation is called parallel venation. For example Wheat leaf ,Barley leaf.

25. Explain the structure of a typical flower with the help of a diagram.

A typical flower contains the following parts:

(1) Stalk- The part by which a flower is attached to the branch is called stalk.

(2) Sepals- The small green leaf-like structures of the flower are called sepals.

(3) Petals- The big coloured leaf like structures are called petals. Different flowers have petals of different colours.

(4) Stamen- It is the male part of flower. It has two parts (a) Filament (b) Anther

(5) Pistil- The innermost part of a flower is called pistil. It has three parts (a) stigma (b) Style (c) Ovary. It is the female part of the flower.

26. Explain an activity to test the presence of starch in a leaf.

Take a leaf in the test tube and pour spirit till it completely covers the leaf. Now put the test tube in a beaker having water. Heat the beaker till all the green colour from the leaf comes out into the spirit in the test tube. Take out the leaf and wash it with water. Put in on a plate and pour some iodine solution over it. The iodine solution is brown in colour but when it comes in contact with starch it turns blue-black. The iodine solution will turn blue-black when dropped on the leaf, this confirms the presence of starch in the leaf.

27. Explain that sunlight is essential for photosynthesis.

Take a potted plant having green leaves. Place it in a dark room for a day or two so that all the starch present in leaves is used by the plant. Now cover a portion of leaf with black paper and keep the plant in sun for a day. Pluck the leaf, remove the black paper and test it for the starch. We see that only that part of the leaf becomes blue black which was open to sun. The covered part does not become blue black. This shows that no starch is formed because it gets no sunlight.

28. Differentiate between tap root and fibrous root.

Tap root – 1. Tap root has only one main and long root. The smaller roots that grow from the main root are called lateral roots.

2. Tap root goes deep into the soil.

3. Tap roots are found in plants which has reticulate venation.

Fibrous root – 1. Fibrous roots do not have a main root. All roots seem similar.

2. They do not go deep into the soil.

3. Fibrous roots are found in plants which has parallel venation

29. Explain the important functions of roots.

The important functions of roots are:-

1. They help to absorb water from the soil.

2. The roots help in holding the plants firmly in the soil.

3. They are said to anchor the plant to the soil.

Chapter – 8  
Body Movements  
Assignment

1 Mark Questions :-

1. What do you mean by movement?

The changing position of the body or any part of the body is called movement.

2. How many types of joints are there?

Ball and socket joint , Hinge joint , Pivot joint . Gliding joint , Fixed joint

3. Give two examples of :-

a. Ball and socket joint

b. Hinge joint

c. Pivot joint

d. Gliding joint

e. Fixed joint

a. Ball and socket joint – Joint of upper arm and shoulder

b. Hinge joint- Joint in fingers

c. Pivot joint – Joint of skull with backbone

d. Gliding joint – The joint in backbone

4. What are joints? Write the names of various types of joints.

Ans: The places where two parts of the body seem to be joined together are called joints. There are following types of joints.

1. Ball and socket joint
2. Pivotal joint
3. Hinge joints
4. Fixed joints
5. Gliding joints

5. What is skeleton?

Ans: The bones in our body form a framework to give shape to the body. This framework is known as skeleton.

2 Marks Questions:-

6. Write two ways through which we may know the shape of human skeleton.

Ans: (i) We can know the shape of skeleton by feeling.

(ii) We could know the shape by X-ray images of human body.

7. Write the difference between bones and cartilage.

Ans: Bones

(1) They are hard.

(2) They cannot bend.

(3) They are used to make framework of the body.

Cartilage

(1) They are soft.

(2) They can bend.

(3) They help to make some parts of the body.

8. Differentiate between shoulder bones and pelvic bones.

Shoulder bones :- The shoulder bones are formed by the collar bone and the shoulder blade. It connects the upper part of the chest and bones of the arm.

Pelvic bones:- The bones which enclose the body part below the stomach are called pelvic bones.

9. What are cartilages?

Some additional part of the skeleton which are not as hard as bones and are elastic in nature and can be bent are called cartilages , e.g. cartilage of ear.

10. What do you mean by streamlined ?

If the body tapers at both the ends then such shape of the body is said to be streamlined. For ex. fish.

11. Why are fractured bones plastered?

Plaster keeps broken bones at their right place so that they grow and join properly.

12. Why do we need two muscles together to move a bone?

A muscle can only pull , it cannot push. Thus two muscles are required to move a bone. When one muscle contracts , the bone is pulled. When another muscle of the pair pulls , it brings the bone in its original position.

13. How do the muscles work?

Ans: The muscles work in pairs. When one of them contracts, the bone is pulled in that direction, the other muscle of the pair relaxes. To move the bone in the opposite direction, the relaxed muscle contracts to pull the bone towards its original position, while the first relaxes. A muscle can only pull. It cannot push.

14. How does earthworm move?

Ans: Earthworm does not have bones. It has muscles. During the movement, it first extends front part of the body keeping the rear portion fixed to the ground. Then it fixes the front and releases the rear end. It then shortens the body and pulls the rear end forward. In this way by repeating such muscular expansions and contractions earthworm moves.

15. How does the snail move?

Ans: The rounded structure on the back of the snail is called a shell. It is the exoskeleton of snail. When it starts moving a thick structure and the head of the snail may come out of an opening in the shell. The thick structure is called foot, which is made up of strong muscles. It helps snail in moving.

16. How does fish move in water?

Ans: The body of fish is streamlined. The streamlined shape helps the fish to move in water. The skeleton of fish is covered with muscles which make the front part of the body to curve to one side and the tail part swings towards the opposite side. This makes a jerk and pushes the body forward. In this way it moves in water.

17. Explain various types of joints found in our body and give example of each.

There are five types of joints in our body.

(1) Fixed joint- Those joints which do not allow movement are called fixed joints.

(2) Ball and socket joint- This joint allows movement in all directions. The rounded end of one bone fits into the hollow space of another bone. For example, joint between upper arm and shoulder.

(3) Pivotal joint- This type of joint allows movement in all planes i.e. up and down, side and other planes. For example, Head

(4) Hinge joint- The joint allows movement only in one plane is called hinge joint. For example, fingers, knees.

(5) Gliding joint- These joints allow only a limited amount of movement of sliding nature of cartilage. For example, the joints of backbone.