**Chapter 4**

**Separation of Substances**

1. The student should look around his house and make a list of mixture he is able to find in his house.
2. Go to the kitchen note down the different mixture used by your mother in the kitchen and different method used by your mother to separate the different components of the mixture.
3. Geeta bought rice from the market and when there were some pebbles and some seeds of pulse mixed in it. Suggest how she could separate both pebbles and pulses from the rice.
4. Ram was carrying a bottle full of mustard oil and bucket filled with water. By chance the bottle slipped from his hand and the oil got mixed with water.
5. Is the mustard oil and water miscible?
6. How can the two be separated?
7. Differentiate homogenous mixture from a heterogeneous mixture.
8. Define the following terms
9. Mixture
10. Sublimation
11. Sedimentation
12. Filtration
13. Complete this Methods of Separation Example of mixture separated

Hand picking

Grains from stalks

Mixture of solid with solid

Winnowing

Sand from pebbles

Iron nails from sand

Sublimation

1. How is the common salt obtained from the sea water?
2. Suppose I fill a glass with water from a river and water is muddy, briefly explain the different methods I should use to obtain clean water.
3. Why do we use loading during sedimentation?
4. Give reasons for the following
5. We churn butter from cream by churning
6. We can separate camphor from sugar by sublimation.
7. Iron nails are separated from a mixture by magnetic separation.
8. Two miscible liquids are separated by distillation.
9. Complete the following statements
10. \_\_\_\_\_\_\_\_\_ is the process of separating insoluble impurities from water.

b) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ has the same composition throughout that is its components are uniformly distributed.

1. A farm machine \_\_\_\_\_\_\_ is used for harvesting and threshing.
2. In \_\_\_\_\_\_\_\_\_\_\_ the lighter components get blown away to distance while the \_\_\_\_\_\_\_\_\_ components fall down closer.
3. The process of solids changing directly into gaseous state on heating is known as \_\_\_\_\_\_\_\_\_.
4. \_\_\_\_\_\_\_\_\_\_ is the process that separates pure solid in form of crystal from a saturated solution.
5. In homes when pulses are washed before cooking the water used for washing is separated by \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_.
6. The dust particles in the air get \_\_\_\_\_\_\_\_\_\_\_\_ with water and settle down.
7. How does loading help in cleaning of air more quickly?
8. Draw a labelled diagram showing the filtration of muddy water.
9. Name two things that can be used for filtration other than filter paper.
10. What is a filtrate?
11. What is the principle on which the centrifuge works?
12. Why do the shopkeepers often sprinkle water around their shops if the area around the shop is not cemented?
13. Can we separate the mixture of salt, ammonium chloride and sand by using one method? I f the answer is no, state the different methods we will need to use?
14. Complete the given table

|  |  |  |
| --- | --- | --- |
| S.N | Mixtures | Components |
| 1 | Air |  |
| 2 |  | Salt, water and sand particles |
| 3 | Aerated drinks |  |
| 4 |  | Lemon juice, sugar and water |
| 5 | Crude oil |  |

1. Name 2 mixture found in
2. Solid form
3. Gaseous form
4. Liquid form
5. What are different used to separate the impurities from the water used for drinking?
6. Name alum which is used for loading.
7. Why is the traditional long handle churner still used in many homes till date?
8. What is the purpose of using threshers in the farm?

**Chapter 5**

**Changes around Us**

1. The student should look around the house and make a list of the changes that occur in their house.
2. What is a change?
3. You find that iron pipe outside your househas patches of rust on it, Suggest what kind of change.
4. You are given list of some changes that occur in the kitchen-freezing of ice, changing of dough into chappatis, evaporation of water, churning of butter Classify these changes as reversible and irreversible change.
5. Are all changes accompanied by some change in the energy also? Give some examples.
6. My mother added small amount of lemon juice to bowl of boiled milk. What will happen to milk and state what kind of change is it.
7. Differentiate slow change from a fast change.
8. Complete the given statements
9. Burning of paper and it turning to ash is an \_\_\_\_\_\_\_\_\_\_\_ change.
10. We can prevent rusting of iron by \_\_\_\_\_\_\_\_\_\_\_,\_\_\_\_\_\_\_\_\_\_ or covering the iron objects with a layer of zinc metal.
11. Bending of copper wire into different shapes is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as copper does not change into another substance.
12. The permanent and irreversible change in which a new substance is formed is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
13. Melting of ice isa change where energy \_\_\_\_\_\_\_\_\_\_\_\_.
14. The burning of LPG is a change where\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
15. The change of season and growth of a plant are example of \_\_\_\_\_\_\_\_\_\_\_\_\_.
16. **\_\_\_\_\_\_\_\_\_\_\_\_**is phenomenon in which an object may become different in its shape, size and at times even in its \_\_\_\_\_\_\_\_\_\_\_\_.
17. A change in which no new substance is formed is known as a \_\_\_\_\_\_\_\_\_\_\_.
18. Breaking of glass tumbler is a physical change, justify.
19. What kind of change is respiration in living beings? State the reason for it.
20. Complete the table

|  |  |  |
| --- | --- | --- |
| S.N | Change | Slow/Fast, Reversible/irreversible, Physical/ Chemical |
| 1 | Changing of milk into curd |  |
| 2 | Rusting of iron |  |
| 3 | Respiration of living being |  |
| 4 | Breaking of chalk |  |

1. Give 2 example each
2. Changes where energy given out
3. Changes where energy is absorbed
4. Reversible change
5. Irreversible change
6. Fast changes
7. Define the following terms
8. Reversible change
9. Physical change
10. Fast change
11. Slow change
12. Change
13. How are physical changes different from chemical changes?
14. What kind of changes are natural changes such as change of weather, change of season and ripening of fruits are?
15. Does rusting of iron belongs to only one category of change?
16. Differentiate reversible change from irreversible change.
17. What kind of the reaction is switching on and off an electric bulb?
18. Take two bowls of water and in one bowl add sugar in one bowl and in the other add few drops of concentrated acid in the other bowl. What do you observe in both the cases. Comment upon the change that occurs in both bowls.
19. Give reason for the following
20. Cooking of food is a chemical change
21. Glowing of bulb is a physical change
22. Boiling of water is a change accompanied by change in energy
23. Burning of wood is chemical change.