STD - VI
SCIENCE
A STUDY OF CHANGES

Q1. What do you mean by a reversible change?

Ans. A change in which the products can be easily converted back to the reactants is a reversible change.

Q2. What do you mean by an irreversible change?

Ans. In an irreversible change, the products cannot be easily changed into reactants.

Q3. What are physical changes? Give examples.

Ans. A physical change is a change in which:

- **No new chemical is formed.**
- **Its easily reversible.**
- **There is no great exchange of heat.**
- **There may be a change in state of matter.**

Eg. - Freezing of water to ice.
Sublimation of iodine.

Q4. What are chemical changes? Give 2 examples.

Ans. A chemical change is a change in which:

- **New substances are formed.**
- **They are normally irreversible.**
- **There are major heat exchanges.**

Eg. - Burning of coal
Burning of Magnesium ribbon in air.

Q5. Describe a reversible change that you can bring about by heating.

Ans. We can heat some Iodine and it would change into violet vapours. If we collect these vapours, they would solidity into Iodine. So this sublimation is a reversible reaction brought about by heating.

Q6. Describe an irreversible change that you can bring about by heating?

Ans. If we heat sugar in a spoon, it gets charred and this is irreversible.

Q7. Mention 2 changes that can be brought about by applying pressure.

Ans:-

- **Gases can be contracted or even liquefied on applying pressure.**
- **Shapes of fluffy solids as a cushion or a sponge can be changed on applying pressure.**

Q8. What are exothermic and endothermic reactions?

Ans. EXOTHERMIC REACTIONS are those during which lot of heat is given out.

Eg.- Burning of coal in air.

ENDOTHERMIC REACTIONS are those reactions in which heat is abdorbed.

Eg. Photosynthesis, dissolution of glucose in water.

Q9. What are desirable and undesirable changes? Give examples.

Ans. A desirable change is one that helps us utilise a resource.

Eg. Boiling of potato is a chemical change that is desirable as it helps us to consume the potato and gain nutrition.

An undesirable change is one that does not benifit us in any way and might be causing wastage of a resource.

Eg. Rusting of iron makes it waste away.

Q10. What must you study to make a systematic study of a change?

Ans. To make a systematic study of a change, we need to observe the following:

- **Is there a change in shape, size or colour of the material?**
- **Is the change slow or fast?**
- **Is the change reversible or irreversible?**
- **Are any new substances formed?**
- **Are there any major heat exchanges?**

Q11. Describe an activity to show that milk can be changed irreversibly into a new substance.

Ans.

- **Take one litre of milk and heat it in a pan.**
- **As it begins to boil, squeeze a lemon into it.**
- **The milk has curdled.**
- **Cottage cheese begins to be formed and can be separated.**
- **This cottage cheese cannot be converted back to milk. Hence its an irreversible change.**

Q12. Classify as Physical (P) or chemical changes(C):

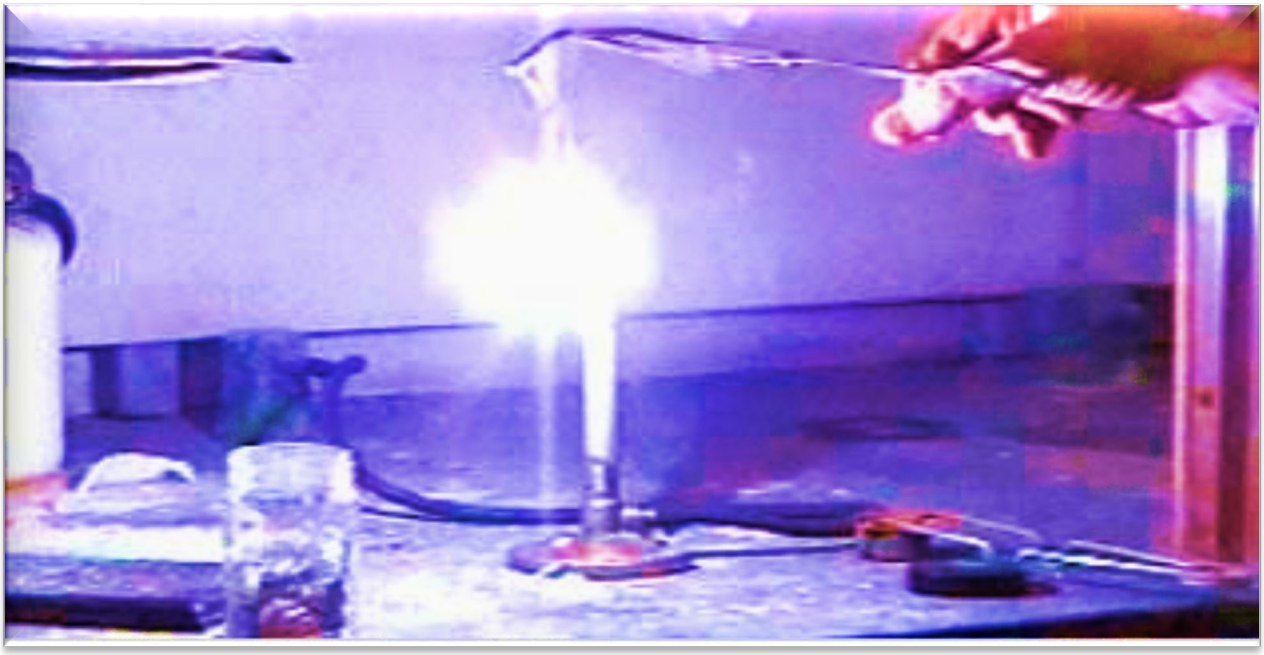
- **The melting of ice- P**
- **Rusting - C**
- **Cooking of food - C**
- **Rotting of an egg- C**
- **Evaporation of a liquid - P**
- **Sublimation of Iodine -P**
- **Dissolution of a liquid- P**
- **Burning of coal- C**
- **Glowing of a bulb- C**
- **Curdling of milk- C**
- **Freezing of water- P**
- **Photosynthesis- C**
- **Condensation of vapour-P**
- **Digestion of food – C**

Q13. Why is burning of a candle both physical and chemical change?

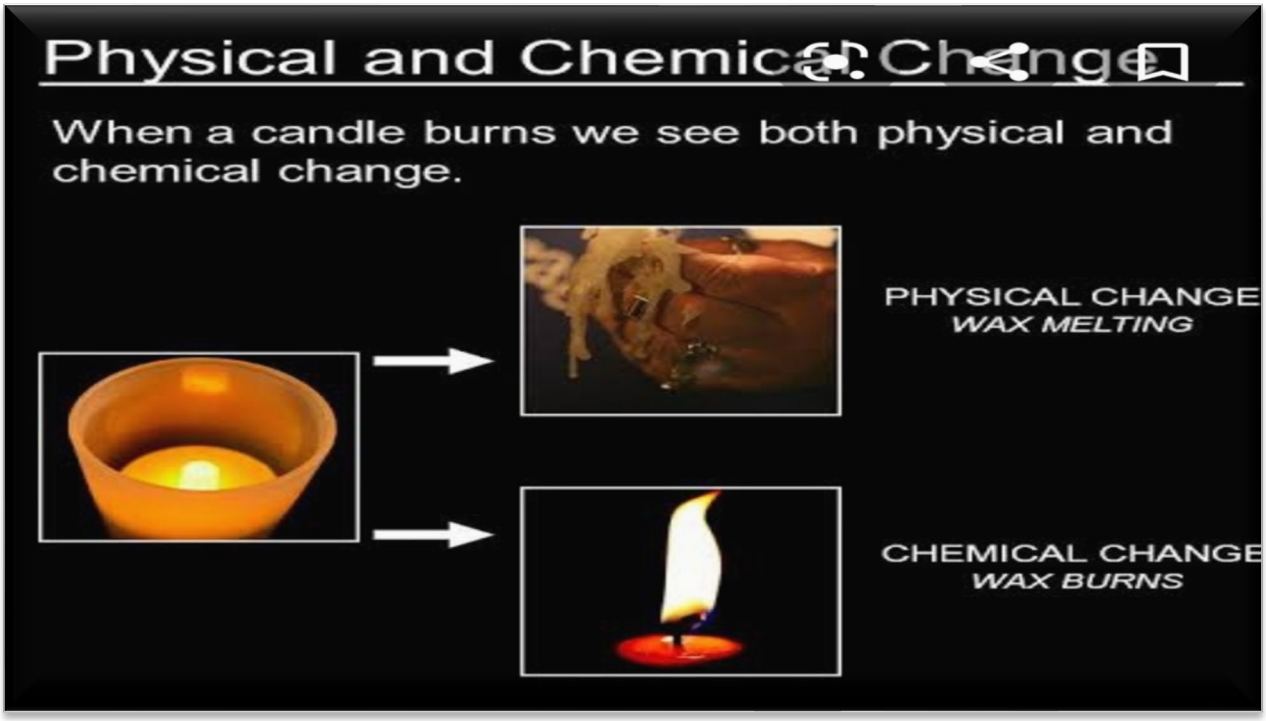
Ans.

- **Burning of a candle involves physical change as the wax melts and flows down to solidify again.**
- **This is a reversible physical change.**
- **The wax near the burning wick burns to form CO_2 and water vapour.**

This is an irreversible chemical change.



BURNING OF MAGNESIUM RIBBON



BURNING CANDLE: PHYSICAL AND CHEMICAL CHANGE

CURDLING OF MILK