

## **Chapter: - 6, Science, Class- VII**

**Q-1) Classify the changes involved in the following processes as physical or chemical changes.**

- a) Photosynthesis is Chemical change
- b) Dissolving sugar in water is a physical change
- c) The burning of coal is a chemical change
- d) The melting of wax is a physical change
- e) Beating aluminium to make aluminium foil is a physical change
- f) Digestion of food is a chemical change

**Q-2) State true/ false**

**Ans:-** (i) False, Correct statement: Cutting a log of wood into pieces is an irreversible physical change.

(ii) False

(iii) True

(iv) False, Correct statement: Iron and rust are two different chemical substances.

(v) True

**Q-3) Fill in the blanks.**

**Ans:-** (a) Calcium carbonate ( $\text{CaCO}_3$ ) (b) Sodium hydrogen carbonate. (c) Galvanization and painting  
(d) Physical (e) Chemical

**Q-4) When baking soda is mixed with lemon juice, bubbles are formed with the evolution of a gas.....**

**Ans:-** When baking soda (Sodium hydrogen carbonate) is mixed with lemon juice (citric acid), bubbles are formed. The bubbles are formed due to the evolution of carbon dioxide gas. This is a chemical change involving the formation of new substances.

Lemon juice + Baking soda  $\longrightarrow$  Carbon dioxide + other substances

**Q-5) When a candle burns, both physical and chemical changes take place.....**

**Ans:-** When a candle burns, both physical and chemical changes take place.

Physical change  $\longrightarrow$  Melting of wax

Chemical change  $\longrightarrow$  Burning of wax

Eating of food is another example where both physical and chemical changes occur simultaneously.

Physical change  $\longrightarrow$  Breaking down of larger food particles into smaller particles

Chemical change  $\longrightarrow$  Digestion of food

**Q-6) How would you show that setting of curd is a chemical change?**

**Ans.** The setting of curd is said to be a chemical change because when the curd is formed, we cannot get the original substance (i.e. milk) back. And a new substance which has a different taste, chemical properties and smell are formed.

**Q-7) Explain why burning of wood and cutting it into small pieces are considered as two different.....**

**Ans.** The burning of wood is a chemical process because when wood is made to burn new substances are obtained such as Charcoal etc.

Wood + Oxygen  $\longrightarrow$  Charcoal +  $\text{CO}_2$  + heat + light

But when wood is cut into small pieces, it is a physical change because no new substance is formed; only the size of the wood is made smaller.

**Q-8) Describe how crystals of copper sulphate are prepared.**

**Ans.** Crystals of copper sulphate are prepared by the method of crystallization. The process is as follows.

- a) Take a cupful of water in a beaker.
- b) Add few drops of dilute sulphuric acid to this.
- c) The water is then heated and when it starts boiling, copper sulphate powder is added with stirring.
- d) Copper sulphate powder should be added on till the solution becomes saturated. It is then filtered into a china dish and allowed to cool.
- e) The solution should be kept undisturbed. Slowly, the crystals of copper sulphate separate out.

**Q-9) Explain how when an iron gate is painted and prevented from rusting.**

**Ans.** Rusting is aided by both moisture (water) and air (oxygen). By painting an iron gate, we prevent its contact from the air and moisture present in the atmosphere. Hence, rusting is prevented.

**Q-10) Explain why the rusting of iron objects is faster in the coastal areas when compared to the deserts**

**Ans.** Both air and moisture are required for rusting to take place. In coastal areas, the quantity of moisture present in air is more than that in deserts. In desert areas, the amount of moisture in air is even lower. Therefore, rusting of iron objects is faster in coastal areas than in deserts.

**Q-11) The gas that is used in kitchens is known as LPG. When the gas is in the cylinder, it is of liquid state but when it comes out it is in gaseous state (Change 1) and is burnt (Change 2). The following statements related to the changes that take place. State the correct statement.**

**Ans.** (b) Process 2 is a chemical change.

**Q-12) The anaerobic bacteria digest the waste of animals and produce a biogas ( change 1) The biogas is burnt as fuel (Change 2). The following statements are the changes that take place. Choose the correct statement.**

**Ans.** (c) Both the process are chemical changes.