

Class-VII (CHAPTER-06) PHYSICAL AND CHEMICAL CHANGES

Questions

- Classify the changes involved in the following processes as physical or chemical changes:
 - Photosynthesis
 - Dissolving sugar in water
 - Burning of coal
 - Melting of wax
 - Beating aluminum to make aluminum foil.
 - Digestion of food
 - State whether the following statements are true or false. In case a statement is false, write the corrected statement in your notebook.
 - Cutting of log of wood into pieces is a chemical change. (True/False)
 - Formation of manure from leaves is a physical change. (True/False)
 - Iron pipes coated with zinc do not get rusted easily. (True/False)
 - Iron and rust are same substance. (True/False)
 - Condensation of steam is not a chemical change. (True/False)
 - Fill in the blanks in the following statements:
 - When carbon dioxide is passed through lime water, it turns milky due to formation of -----.
 - The chemical name of baking soda is -----.
 - Two methods by which rusting of iron can be prevented are ----- and -----.
 - Changes in which only ----- properties of a substance change are called physical changes.
 - Changes in which new substances are formed are called ----- changes.
 - When baking soda is mixed with lemon juice, bubbles are formed with the evolution of a gas. What type of change is it? Explain.
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5. When candle burns, both physical and chemical changes take place. Identify these changes. Give another example of familiar process in which both the chemical and physical changes take place.
 6. How would you show that setting of curd is a chemical change?
 7. Explain why burning of wood and cutting it into small pieces are considered as two different types of changes.
 8. Describe how crystals of copper sulphate are prepared.
 9. Explain how painting of an iron gate prevents it from rusting.
 10. Explain why rusting of iron objects is faster in coastal areas than in deserts.
 11. The gas we use in the kitchen is called liquefied petroleum gas (LPG). In the cylinder it exists as liquid. When it comes out from the cylinder it becomes a gas (change A) then it burns (change B). The following statements pertain to these changes. Choose the correct one.
 - (i) Process – A is a chemical change.
 - (ii) Process –B is chemical change.
 - (iii) Both processes A and B is a chemical changes.
 - (iv) None of these processes is a chemical change.
 12. Aerobic bacteria digests animal waste and produce biogas (change –A).The biogas is then burnt as fuel(change-B). The following statements pertain to these changes. Choose the correct one.
 - (i) Process – A is a chemical change.
 - (ii) Process –B is a chemical change.
 - (iii) Both processes A and B are chemical changes.
 - (iv) None of these process is a chemical changes.
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Answers

1.
 - (a) Chemical change
 - (b) Physical changes
 - (c) Chemical change
 - (d) Physical change
 - (e) Physical change
 2.
 - (a) False- cutting a log of wood into pieces is a physical change.
 - (b) False- formation of manure from leaves is a chemical change.
 - (c) True
 - (d) False- Iron and rust are different substances.
 - (e) True
 3. Fill in the blanks in the following statements:
 - (a) When carbon dioxide is passed through lime water, it turns milky due to formation of **calcium carbonate**.
 - (b) The chemical name of baking soda is **sodium hydrogen carbonate**.
 - (c) Two methods by which rusting of iron can be prevented are **painting** and **galvanization**.
 - (d) Changes in which only **physical** properties of a substance change are called physical changes.
 - (e) Changes in which new substances are formed are called **chemical** changes.
 4. It is a chemical change. Here, a new substance, carbon dioxide is formed.
 5. The wax of the candle first melt then vaporizes and burns.

Melting of wax is a physical change since melted wax can be solidified back to the wax and there is not new substance is formed.

When wax burns, smoke and carbon dioxide is formed which are new substance.

So, it is a chemical change.

Lightening of bulb using a dry cell is a chemical as well as physical change.

Chemical reaction inside the dry cell produce current and lighting is conversion of electrical energy to light energy.
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NCERT Solutions

6. When some sour substance is added to milk or kept overnight, it turns into curd. The curd is no way can be converted into milk. Curd is a different substance than milk. So, formation of curd is a chemical change.
7. Burning of wood produces ash and smoke. Hence the properties of wood are changed and new substances are formed. So, it is a chemical change.
When a log of wood is cut into small pieces, there is no new substance formed. Each small piece bears the properties of wood. So, it is a physical change. Obviously, burning and cutting of wood are two different types of changes.
8. A cup of water is taken in a beaker and a few drops of dilute Sulphuric acid are added into it. The water is heated. When it start boiling copper sulphate powder is added slowly while stirring continuously till no more powder can be dissolved. The solution is filtered and allowed to cool down. Crystal of Copper sulphate slowly forms at the bottom of the beaker.
9. For rusting, iron must be in contact with both air and moisture. When iron gate is painted the layer of paint cuts the contact between air, moisture and iron. Thus, it prevents rusting.
10. In coastal areas there is more moisture in air due to the presence of sea. But, in desert there is a scarcity of water and hence air is almost dry there. Both air and moisture are necessary conditions for rusting. So, rusting is faster is coastal areas than in desert.
11. (ii) Process –B is a chemical change.
12. (iii) Both processes A and B are chemical changes.
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