

NCERT SOLUTIONS- PHYSICAL AND CHEMICAL CHANGES

NCERT Solutions for Class 7 Science Chapter 6 Physical and Chemical Changes is the essential study material to perfect Physical and Chemical Changes topics. The NCERT Class 7 Science solutions provided here correctly answer NCERT textbook questions. Solutions curated in a comprehensive manner will help students understand the subtopics in this chapter in a better way.

IMPORTANT SUB-TOPICS MENTIONED IN THE NCERT CLASS 7 SCIENCE CHAPTER 6 PHYSICAL AND CHEMICAL CHANGES:

NCERT Solutions for Class 7 Science Chapter 6 Physical and Chemical Changes has the following sub-topics as given below:

Sr. no	Topics
1.	Physical Changes
2.	Chemical Changes
3.	Rusting of Iron
4.	Crystallisation

NCERT SOLUTIONS CLASS 7 SCIENCE CHAPTER 6 PHYSICAL AND CHEMICAL CHANGES:

1. **Classify the changes involved in the following processes as physical or chemical changes.**
 - (a) Photosynthesis
 - (b) Dissolving sugar in water
 - (c) Burning of coal
 - (d) Melting of wax
 - (e) Beating aluminium to make aluminium foil
 - (f) Digestion of food

ANS- a) Chemical change

b) Physical Change

c) Chemical change

d) Physical Change

e) Physical Change

f) Chemical change

2. **State whether the following statements are true or false. In case a statement is false, write the corrected statement in your notebook.**
 - (a) Cutting a log of wood into pieces is a chemical change. (True/False)
 - (b) Formation of manure from leaves is a physical change. (True/False)
 - (c) Iron pipes coated with zinc do not get rusted easily. (True/False)
 - (d) Iron and rust are the same substances. (True/False)
 - (e) Condensation of steam is not a chemical change. (True/False)

ANS-

- False
- False
- True
- False
- True

3. Fill in the blanks in the following statements:

(a) When carbon dioxide is passed through lime water, it turns milky due to the formation of _____.

(b) The chemical name of baking soda is _____.

(c) Two methods by which rusting of iron can be prevented are _____ and _____.

(d) Changes in which only _____ properties of a substance change are called physical changes.

(e) Changes in which new substances are formed are called _____ changes.

ANS-

- Calcium carbonate.
- Sodium hydrogen carbonate.
- Painting and galvanisation
- Physical
- Chemical

4. When baking soda is mixed with lemon juice, bubbles are formed with the evolution of a gas. What type of change is it? Explain.

ANS- When lemon juice and baking soda are combined, carbon dioxide gas evolves and creates bubbles. A chemical change has occurred.

Lemon juice + Baking soda → Carbon dioxide + other substances

5. When a candle burns, both physical and chemical changes take place. Identify these changes. Give another example of a familiar process in which both chemical and physical changes take place.

ANS- Candle Burning

- The wax melting is a physical change.
- The combustion of petrol results in the evolution of CO₂, which is the chemical change.

Digestion of Food

- The breakdown of more complex food molecules into simpler ones is known as physical change.
- Food is changed chemically when it is broken down by enzymes and HCl.

6. How would you show that the setting of curd is a chemical change?

ANS- As the curd cannot change into milk back and both curd and milk have different properties. It shows that setting of curd is a chemical change.

7. Explain why burning wood and cutting it into small pieces are considered two different types of changes.

ANS- Since the wood is not altered by the act of cutting it, it just undergoes a physical change. On the other hand, burning wood causes a chemical change since it turns into charcoal and releases CO₂.

8. Describe how crystals of copper sulphate are prepared.

ANS- The crystallisation procedure is used to create copper sulphate crystals and is explained as follows:

- Fill a beaker with one cup of water.
- To this, add a few drops of diluted sulfuric acid.
- When the water begins to boil, continue stirring while adding the copper sulphate powder.
- As soon as the solution is saturated, continue to add copper sulphate powder. Allow it to cool after filtering into a china dish.
- The solution needs to be left alone. Copper sulphate crystals slowly start to separate.

9. Explain how painting an iron gate prevents it from rusting.

ANS- Iron must come into touch with oxygen and moisture to rust. Painting an iron gate helps to stop rusting of the metal by preventing contact between the iron, oxygen, and water (moisture).

10. Explain why rusting of iron objects is faster in coastal areas than in deserts.

ANS- Iron must come into touch with oxygen and moisture to rust. Because there is greater humidity in coastal areas than in deserts, iron things rust there more quickly than in deserts.

11. The gas we use in the kitchen is called liquified petroleum gas (LPG). In the cylinder, it exists as a 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 a chemical change.
- (iii) Both processes A and B are chemical changes.
- (iv) None of these processes is a chemical change.

ANS- (ii) Process – B is a chemical change.

12. Anaerobic bacteria digest 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 processes is a chemical change.

ANS- (iii) Both processes A and B are chemical changes.