

NCERT Solutions

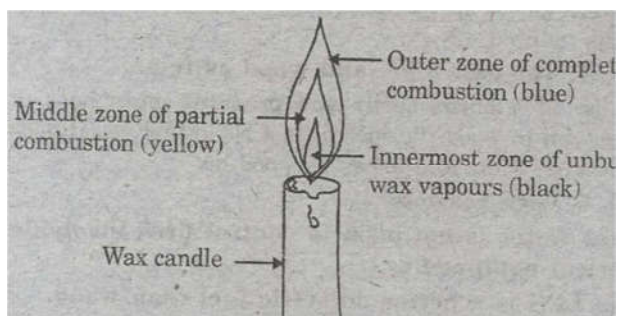
Class–VIII (CHAPTER-06)

COMBUSTION AND FLAME

Answers

1. Conditions under which combustion can take place are as follows:
 - a. Air
 - b. The ignition temperature
 - c. Inflammable substance.
 2. Fill in the blanks.
 - (a) Burning of wood and coal causes **pollution** of air.
 - (b) A liquid fuel, used in home is **LPG**.
 - (c) Fuel must be heated to its **ignition temperature** before it starts burning.
 - (d) Fire produced by oil cannot be controlled by **water**.
 3. The use of CNG in automobiles has reduced pollution in our cities because CNG does not produce any poisonous gas on burning. That is why pollution in our cities is reduced.
 4. LPG burns easily and produces more heat in comparison to wood. Besides, it is a clean fuel, it does not produce fume and ashes as wood do. LPG can be stored and transported easily and conveniently.
 5.
 - (a) Water is not used to control fire produced by electrical equipment because water is conductor of electricity and may result in electric shock.
 - (b) LPG is a substance which is readily available. It is cheaper and burns easily in air at moderate rate. It produces large amount of heat and does not leave behind any undesirable substance.
 - (c) Paper catches fire easily, but when it is wrapped around an aluminium pipe, the ignition temperature does not meet as heat is transferred to aluminium to lower the temperature of paper.
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6.



7. The calorific value of a fuel is expressed in kilojoules per kg (kJ/kg).
8. Carbon dioxide being heavier than oxygen covers the fire like a blanket. Since the contact between fuel and oxygen is cut off, the fire is controlled. The added advantage of carbon dioxide is that in most cases it does not harm the electrical appliances.
9. Green leaves contain lot of water. So, when we try to burn green leaves, water contained in the leaves cools the combustible materials, so that its temperature is brought below its ignition temperature. This prevents the burning of green leaves. In case of dry leaves, water is absent in them so burning process start as the temperature is raised above the ignition temperature and the leaves catch fire easily.
10. The goldsmith uses the outermost zone of a flame with a metallic blow pipe for melting gold and silver.
The flame in outermost zone has the highest temperature sufficient to melt the gold and silver.
11. Calorific value of a fuel = Total heat produced/total mass burnt.
Here, mass of fuel = 4.5 kg.
Heat produced = 180,000 kJ.
Therefore, calorific value of fuel = $180,000/4.5\text{kg} = 40,000 \text{ kJ/kg}$.
12. Yes, process of rusting can be called combustion, in fact, slow combustion, because rusting also takes place in the air in presence of humidity in the atmosphere.
13. The water of Ramesh's beaker will get heated in a shorter time because the outermost part of the flame is the hottest.
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