NCERT Solutions For Class 8 Science Chapter 6: One of the most important resources for Class 8 students is the NCERT Solutions for Class 8 Science Chapter 6 Combustion and Flame. Students can prepare for the topics in an interactive way with the aid of these NCERT Solutions provided here.

Also available here is the Solutions PDF, which our professionals generated using the most recent CBSE syllabus and rules. NCERT Solutions is an essential resource for students to prepare for exams and complete homework. The NCERT Science Solutions are essential for children to succeed in competitive exams and Class 8 boards.

It is recommended that eighth-grade students read from the NCERT textbooks and work through the exercise questions to gain a deeper comprehension of the subjects and their subtopics. Examine the Class 8 Science NCERT Solutions available here to get all of your questions answered right away and to acquire a solid grasp of the fundamentals.

The questions on combustion, types of combustions, oxygen's role in combustion, ignition temperature, combustible materials, fire control, definition and various zones of flame, hazardous pollutants, acid rain and its effects are all covered in this NCERT Solutions for Class 8 Science.

NCERT Solutions For Class 8 Science Chapter 6 Overview

Chapter 6 of NCERT Solutions for Class 8 Science For students pursuing science, one of the most crucial subjects to learn about is combustion and flame. Understudies can benefit from these ignition and fire setups, which can help them set up the subjects in an intuitive manner. For a deeper understanding of the themes and subtopics, students focusing on Class 8 are also urged to read the NCERT course texts and understand the provided questions.

Examine the arrangements provided to quickly resolve any questions. The questions about burning, types of burnings, the role of oxygen in burning, start temperature, combustible materials, fire control, definition and different zones of fire, hazardous contaminations, corrosive rain and its contents are all addressed in this NCERT Solution.

Points Covered in Class 8 Science Chapter 6

Compounds that ignite when exposed to air are considered combustible.

Oxygen is needed for combustion and is present in the air. The combustion process results in the emission of heat and light. The ignition temperature is the lowest temperature at which a combustible substance will ignite.

Low ignition temperatures are associated with combustible materials. By removing one or more of the factors that contribute to fire's ignition, it can be subdued.

Flames are often extinguished with water. Flames started by lubricants or electrical equipment cannot be extinguished with water.

There are various types of combustion, including explosive, spontaneous, and rapid. Three discrete zones can be distinguished in a flame: black, bright, and non-luminous. The cost and efficiency of different fuels differ.

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NCERT Solutions For Class 8 Science Chapter 6

1. List conditions under which combustion can take place.

Soln:

The burning of a substance in the presence of oxygen is defined as combustion.

The conditions under which combustion can take place are

- The presence of air or oxygen.
- The presence of fuel plays a significant role.
- Ignition temperature is maintained (It is defined as the substance that catches fire at its lowest temperature.)

2. Fill in the blanks.

(a) Burning of wood and coal causes _____of air.

(b) A liquid fuel, used in homes is_____ .

(c) Fuel must be heated to its _____ before it starts burning.

(d) The fire produced by oil cannot be controlled by_____ .

Soln:

(a) Burning of wood and coal causes **pollution** of air.

(b) A liquid fuel, used in homes is **kerosene**.

(c) Fuel must be heated to its **ignition temperature** before it starts burning.

(d) The fire produced by oil cannot be controlled by **water.**

3. Explain how the use of CNG in automobiles has reduced pollution in our cities.

Soln:

Among cars, CNG contributes significantly to pollution reduction for the following reasons:

In comparison, CNG is a cleaner fuel.
As an alternative to petrol, diesel and propane/LPG, consider using CNG.
Compared to the other fuels indicated above, it typically contains a few more unwanted gases.
When fuels like petroleum burn, a lot of unburned carbon particles are released into the air along with carbon monoxide, which can cause respiratory illnesses.

4. Compare LPG and wood as fuels.

Soln:

Wood

It is regarded as a conventional fuel that can be utilised for both household and commercial uses.
A large amount of smoke from wood pollutes the air and leads to respiratory illnesses.
Deforestation is largely caused by the consumption of timber.
Wood has a calorific value of between 17,000 and 22,000 kJ/kg.
On the other hand, wood can be used for a campfire or furnace outside as well as an indoor furnace, stove or fireplace.

LPG

The application Wood has been substituted by Liquefied Petroleum Gas (LPG).
It doesn't emit any toxins or smoke.
The fuel is cleaner.
LPG has a higher fuel efficiency than wood.
LPG has a calorific value of 55,000 kJ/kg.
LPG is therefore the best option.

5. Give reasons.

(a) Water is not used to control fires involving electrical equipment.

(b) LPG is a better domestic fuel than wood.

(c) Paper by itself catches fire easily whereas a piece of paper wrapped around an aluminium pipe does not.

Soln:

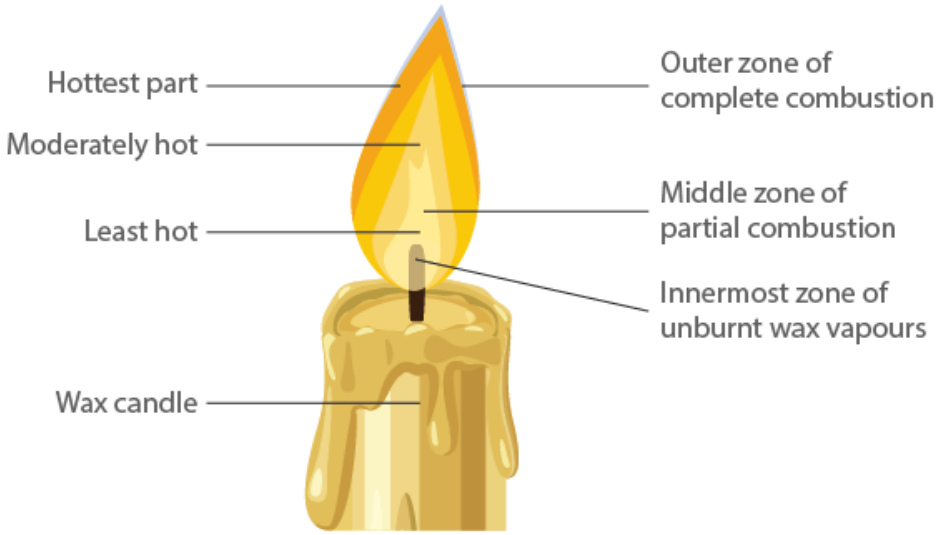
a) Water is an excellent electrical conductor.
Water wouldn't do anything but spread the electricity in an electrical fire.
Someone putting out the flames could receive an electric shock.

b) Unlike wood, which releases smoke and other pollutants, LPG is a cleaner fuel.
Conversely, wood produces a great deal of smoke and pollutants into the atmosphere, which contaminates it and causes respiratory illnesses.
For this reason, LPG is a superior home fuel than wood.

c) Due to its low ignition temperature, the paper itself easily catches fire.
Because aluminium is an excellent electrical conductor, the sheet of paper wrapped around the pipe doesn't catch fire.
However, the temperature at which paper is wrapped around an aluminium pipe rises.
Therefore, heat is transferred from the paper to the aluminium pipe. It doesn't catch fire as a result.

6. Make a labelled diagram of a candle flame.

Soln:



7. Name the unit in which the calorific value of a fuel is expressed.

Soln:

Calorific value is defined as the energy contained in the fuel. It is expressed in the form kJ/kg

kJ=kilo joules and kg=kilogram

8. Explain how CO_2 is able to control fires.

Soln:

As a non-flammable gas, CO_2 puts out fire in two ways:

(i) Because it weighs more than oxygen, it blankets the flames and prevents oxygen from coming into touch with fuel.

(ii) CO_2 is stored in liquid form in cylinders. When it is released, it greatly expands. This lowers the fuel's temperature, aiding in the containment of the fire.

9. It is difficult to burn a heap of green leaves but dry leaves catch fire easily. Explain.

Soln:

The high igniting temperature of a pile of green leaves is caused by their high moisture content. It does not readily catch fire as a result.

However, dried leaves have a low ignition temperature because they are devoid of moisture. As a result, they burn easily.

10. Which zone of a flame does a goldsmith use for melting gold and silver and why?

Soln:

The non-luminous flame, which is thought to be the outermost portion of the flame, is mostly used by goldsmiths. Because the outermost flame completely burns and is thought to be the hottest component of the flame, this portion of the flame is used.

11. In an experiment, 4.5 kg of a fuel was completely burnt. The heat produced was measured to be 180,000 kJ. Calculate the calorific value of the fuel.

Soln:

Heat produced by 4.5 kg of fuel = 180000 kJ

Therefore, heat produced by $1\text{kg of fuel} = \frac{180000}{4.5} \times 1$ kJ/kg

= 40,000 kJ/kg

Hence, the calorific value of the fuel is 40,000 kJ/kg.

12. Can the process of rusting be called combustion? Discuss.

Soln:

No, because heat is released during the rusting process, rusting is an exothermic reaction. In contrast, combustion is a chemical reaction that releases energy in the form of light or heat when a material combines with oxygen.

13. Abida and Ramesh were doing an experiment in which water was to be heated in a beaker. Abida kept the beaker near the wick in the yellow part of the candle flame. Ramesh kept the beaker in the outermost part of the flame. Whose water will get heated in a shorter time?

Soln:

Given that it is the hottest area of the flame and is considered non-luminous, water placed in its outermost part will heat up quickly. Thus, we shall heat Ramesh's beaker first. On the other hand, Abida, who positioned the beaker in the yellow flame, is relatively less heated.

Benefits of NCERT Solutions For Class 8 Science Chapter 6

NCERT Class 8 Science Chapter 6 has countless advantages. All candidates' doubts will be dispelled by the solutions, and all future inquiries on these subjects are covered in this article. Clear understanding into combustion and flame is provided by the Combustion and Flame Class 8 NCERT Solutions. All kids can understand the basic language used to provide these solutions. Teachers who are recognised as subject matter experts provide the answers.

These are produced with the express intention of assisting the pupils in achieving the highest possible grade on these subjects. In order to ensure that students can tackle any problem in the subject matter with ease, the solutions also include real-world examples from Chapter 6 Science Class 8. These solutions provide a comprehensive coverage of all likely exam subjects, enabling students to score higher on the test.