

Class 8 Combustion and Flame MCQs

Q-1: Which of the following is a chemical reaction that produces heat when a substance reacts with oxygen?

- a) Oxidation
- b) Combustion
- c) Reduction
- d) Hydrolysis

Answer: b) Combustion

Explanation: Combustion is a chemical reaction in which a substance reacts with oxygen to produce heat.

Q-2: Ignition temperature is the _____ temperature at which the substance catches fire.

- a) Highest
- b) Lowest
- c) Maximum
- d) Room

Answer: b) Lowest

Explanation: The lowest temperature at which a substance catches fire is referred to as its ignition temperature.

Q-3: A mixture of antimony trisulphide, potassium chlorate, and white phosphorus, along with glue and starch, was applied to the head of a suitable wood match. Which of the following chemicals ignites when struck against a rough surface?

- a) Antimony trisulphide
- b) White Phosphorous
- c) Glue
- d) Starch

Answer: b) White Phosphorous

Explanation: The heat of friction caused white phosphorus to ignite when it was struck against a rough surface. As a result, the match began to burn.

Q-4: Which of the following is not an inflammable substance?

- a) Alcohol
- b) Wood
- c) Ethanol
- d) Liquified Petroleum Gas

Answer: b) Wood

Explanation: Inflammable substances are those that have a very low ignition temperature and can easily catch fire with a flame. Inflammable substances include gasoline, alcohol, and liquefied petroleum gas (LPG). Hence, only wood is an inflammable substance.

Q-5: Which of the following is the best fire extinguisher for electrical equipment and inflammable substances?

- a) Water
- b) CO₂
- c) O₂
- d) All of the above

Answer: b) CO₂

Explanation: Carbon dioxide (CO₂) is the best extinguisher for fires involving electrical equipment and inflammable materials such as gasoline. Because CO₂ is heavier than oxygen, it blankets the fire. The fire is under control because the contact between the fuel and the oxygen has been cut off. CO₂ has the added benefit of not causing damage to electrical equipment in most cases.

Q-6: Which of the following describes a type of combustion in which a substance suddenly bursts into flame without any apparent cause?

- a) Rapid
- b) Explosion
- c) Spontaneous
- d) None of the above

Answer: c) Spontaneous

Explanation: The type of combustion in which a material spontaneously bursts into flames without any apparent cause is known as spontaneous combustion.

All other types of combustion, on the other hand, require the application of heat in order to ignite.

Q-7: Which of the following is not an ideal fuel characteristic?

- a) Costly
- b) Readily available
- c) Easy to transport
- d) High calorific value

Answer: a) Costly

Explanation: An ideal fuel is inexpensive, widely available, easily combustible, and portable. It has a high calorific value. It emits no gases or residues that pollute the environment.

Q-8: Which of the following units expresses fuel efficiency in terms of calorific value?

- a) kg/kJ
- b) kJ/kg
- c) J/kg
- d) J/g

Answer: b) kJ/kg

Explanation: Fuel efficiency is measured in terms of calorific value, which is measured in kilojoules per kilogramme (kJ/kg).

Q-9: Which of the following does not burn with a flame?

- a) Molten wax
- b) Kerosene oil
- c) Charcoal
- d) Camphor

Answer: c) Charcoal

Explanation: The substances that vaporise during combustion produce flames. For example, kerosene oil and molten wax rise through the wick and are vapourised during burning and form flames. Charcoal, on the other hand, does not. As a result, no flame is produced.

Q-10: Which of the following is a fuel that is good for the environment and is used in automobiles?

- a) Diesel
- b) Petrol
- c) Natural gas
- d) Petroleum gas

Answer: c) Natural gas

Explanation: When carbon-containing fuels such as wood, coal, and petroleum are burned, they produce air pollution, respiratory problems, acid rain, and global warming. However, CNG (Compressed Natural Gas) is referred to as a cleaner fuel because it emits very little harmful gas.

Q-11: Which of the following fuels has a calorific value of 45000 kJ/kg?

- a) Cow dung cake
- b) Petrol
- c) LPG
- d) Biogas

Answer: b) Petrol

Explanation: Below table shows the calorific value for various different fuels:

Fuel	Calorific Fuel (kJ/kg)
Cow dung cake	6000-8000
Petrol	45000
LPG	55000
Biogas	35000-40000

The table clearly shows that petrol has a calorific value of 45000 kJ/kg.

Q-12: It is dangerous to burn wood in a room. The gas X produced can be fatal to the person sleeping in the room. Identify the gas X.

- a) CO_2
- b) SO_2
- c) CO
- d) N_2

Answer: c) CO

Explanation: It is dangerous to burn wood in a room because wood burns incompletely and emits CO gas. The CO gas produced is lethal to anyone sleeping in the room.

Q-13: Which type of combustion is exemplified by the combustion of match sticks?

- a) Explosive combustion
- b) Spontaneous combustion
- c) Rapid combustion
- d) None of the above

Answer: c) Rapid combustion

Q-14: Which zone of the candle flame burns with a blue flame?

- a) Outer zone
- b) Middle zone
- c) Innermost zone
- d) All of the above

Answer: a) Outer zone

Explanation: A candle flame's outer zone is a zone of complete combustion that burns with a blue flame. It's also the hottest area.

Q-15: Which type of fire can be safely extinguished with water?

- a) Fire caused by petrol
- b) Fire caused by oil
- c) Fire caused by electrical equipment
- d) Fire caused by wood

Answer: d) Fire caused by wood

Explanation: Water only works when materials such as wood and paper are on fire. Water may conduct electricity and harm those attempting to extinguish a fire if electrical equipment is on fire. Water is incompatible with fires involving oil and gasoline because it is heavier than oil and gasoline.

Q-16: Which of the following substances has the lowest ignition temperature?

- a) Charcoal
- b) Paper
- c) Wood
- d) White Phosphorus

Answer: d) White Phosphorus

Explanation: Substances with a lower ignition temperature easily catch fire. White phosphorus has the lowest temperature of all, with a temperature of around 30°C.

Q-17: Which of the following candle flame zones is characterised by the deposition of unburned carbon particles?

- a) Luminous zone
- b) Non luminous zone
- c) Middle zone
- d) Outer zone

Answer: a) Luminous zone

Explanation: The deposition of unburnt carbon particles is present in the luminous zone of the flame.

Q-18: Which of the following gases is produced when there is sufficient oxygen supply?

- a) CO
- b) CO₂
- c) Both CO and CO₂
- d) N₂

Answer: b) CO₂

Explanation: Complete combustion occurs in the presence of sufficient oxygen, resulting in the release of carbon dioxide gas.

Q-19: Which of the following is not a combustible substance?

- a) Iron Rod
- b) Wood
- c) CNG
- d) Paper

Answer: a) Iron Rod

Explanation: Combustible substances are those that can be easily burned, whereas non-combustible substances are those that cannot be easily burned. Wood, CNG, and paper are combustible materials, whereas iron rod is not.

Q-20: Which of the following are necessary requirements for producing a fire?

- a) Fuel, N_2 , Heat
- b) CO_2 , Water, O_2 gas
- c) Fuel, O_2 , Water
- d) Fuel, O_2 , Heat

Answer: d) Fuel, O_2 , Heat

Explanation: Fuel, air (to supply oxygen), and heat (to raise the temperature) are all required for the production of fire.