

## Combustion and flame

### Questions

1. What is the process called when burning of a substance produces heat and light?
2. Two chemicals give off carbon di oxide
3. What kind of fire is water not suitable for?
4. Which part of the flame is used by goldsmith to melt gold and silver?
5. Which of the two CO<sub>2</sub> or H<sub>2</sub>O is used to extinguish fire caused by short circuit?
6. Why forest fire takes place in summer?
7. Name any two methods to extinguish a fire
8. Name any two gases responsible for green- house effect
9. Write down the main characteristics of different zones of the flame
10. How can incomplete combustion of fuels lead to health hazards?
11. LPG, Coal, petrol, wood out of these fuels mentioned here, one of them has the highest calorific value. state its advantages.
12. How does spontaneous combustion and rapid combustion differ from each other?
13. Draw a labeled diagram of a candle flame
14. Distinguish between the different zones of the flame on the basis of 1. temperature 2. Color
15. Give any two qualities of an efficient fuel
16. Why soot is formed under the utensils if they are heated on yellow flame
17. What is combustion? Mention three important conditions
18. Why calorific value is an essential for fuel selection?
19. Why is it difficult to store inflammable substances? Can inflammable substances undergo spontaneous combustion?

20. Which of the following are combustible and which are not?

Clay, wood, sand, cement, paper, clothes

21. Burning of fossil fuel is responsible for acid rain. Justify the statement

22. Can all combustible substances be called fuels? Why or why not?

23. White phosphorus catches fire on its own when room temperature is equal to more than 35 degree celcius. Why?

24. Acid soda fire extinguisher

a) What is the principle of fire extinguisher?

b) Name the two main chemicals?

c) Name the new substances formed here?

d) If it is a gas state its properties

e) In this experiment which criteria necessary for burning of candle is eliminated?

f) Write down the chemical equation involved

25. Kerosene burns with flame but charcoal does not. Why?

26. Define calorific value? What is its SI unit?

27. Write down the principle of water and carbon di oxide as fire extinguisher

28. write two situations where we can't use water as fire extinguisher

29. What is difference between combustible material and fuel?

30. Write down the characteristics of a good fuel

31. Is there any ideal fuel?

32. Describe any two types of combustion

33. Rusting is combustion .....do you agree? Give your opinion

34. Why dry leaves catch fire?

35. What kind of substances give flame and why?

36. Classify in different types of combustion

- a) Burning of fire crackers
- b) Forest fire
- c) Rusting of iron
- d) Fire in coal
- e) Burning of phosphorus at room temperature
- f) Burning of a fuel gas
- g) Burning of paper

37. In an experiment 6.5 kg of a fuel was completely burnt. The heat produced was measured to be 227500KJ. Calculate the calorific value of the fuel.

38. What is inflammable substances?

39. Calculate the calorific value of a fuel if 2.5kg of it burns to yield 200,000 kilo joules of energy.

40. Petrol on combustion produces CO<sub>2</sub>, CO, H<sub>2</sub>O whereas diesel produces CO<sub>2</sub>, SO<sub>2</sub>, CO, SPM and H<sub>2</sub>O but diesel is cheaper than petrol. Which one is better and why?

41. Name the gases that can cause

- 1. Global warming
- 2. Disabling RBC
- 3. Acid rain

42. 5 kg of coal was burnt completely in air, the heat produced was 55,000kJ. Calculate its calorific value

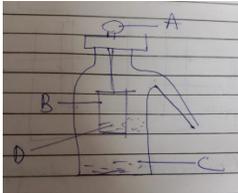
43. Why should not we sleep in a room with burning coal fire in it?

44. What is acid rain?

45. calculate the calorific value of a fuel, if it produces 180000 KJ of heat by complete combustion of 4.5 kg of that fuel

46. What is soot? How is it formed when a candle burns?
47. Would a candle burn without a wick?
48. If the value is 25000 KJ/kg, then calculate the amount of energy produced by burning 1.5 kg of it.
49. Which part of flame does not show any color change

50. label all parts of fire extinguisher



### Give reason

1. A piece of paper does not catch fire on its own.
2. More care is needed to store kerosene than coal, though both are fuels
3. Carbon di oxide is considered as an excellent fire extinguisher
4. LPG is better fuel than cow dung
5. A paper cup containing water does not burn when placed over a flame
6. A gold smith uses the outermost part of the flame
7. Blanket is wrapped around a person whose cloth catch fire
8. It is easier to burn wood shaving than a log of wood
9. Food is the fuel for our body
10. Pouring water on fire extinguish it
11. Match sticks is rubbed against a rough surface to light it
12. Paper burns with a yellow flame

13. LPG is better fuel than wood
14. Digestion of food during respiration is called slow combustion
15. Liquid fuels are preferred over gaseous fuels
16. A log of wood burning is covered with blanket and the fire was extinguished.
17. Kerosene oil does not catch fire on its own at the room temperature.
18. A piece of wet cloth does not catch fire when burnt. What is the role of water in this?
19. Partial combustion of fuel is harmful
20. Water can't be used to extinguish fire caused due to electric short circuit
21. Water can stop a combustible substance from burning
22. Why should not we sleep in a room with burning coal fire in it?

### **True and false**

1. Wet paper can't burn immediately
2. If a person's clothes catch fire, he must be immediately covered with a blanket
3. LPG is a bad fuel
4. All the dark zones of a candle flame are very hot zones

### **Give one word**

1. Unit to measure calorific value
2. Type of combustion phosphorus undergoes
3. Minimum temperature at which substances catch fire
4. The substances which can easily catch fire with a flame
5. Combustion shown by phosphorus

6. Those substances which have a very low ignition temperature and can easily catch fire and burn with a flame
7. Substance burnt in order to produce heat energy
8. Lowest temperature at which substance catch fire

### **Fill in the blanks**

1. The outermost zone of the candle flame is .....
2. The substances that have very low ignition temperature and can catch fire easily known as .....
3. On heating coal in the presence of air the products are ....., ....., .....
4. The cleanest fossil fuel is .....
5. A soda acid fire extinguisher gives out .....to extinguish fire

### **Analyze**

1. Sachin stopped his friends from buying crackers instead he asked him to buy terracotta lamps before Diwali
  - a) Why did Sachin stop his friend from buying crackers? Give reason
  - b) What value is depicted by Sachin?