

**Kerala State Board  
Class X Chemistry  
Sample Paper – 2****Time: 1½ hrs****Total Marks: 40****Instructions:**

1. 15 minutes is given as cool off time.
2. This time is to be spent for reading the question paper and planning answers.
3. You are not supposed to write anything during the cool off time.
4. Attempt questions according to instructions

1. Sub-shell electronic configurations of some elements are given below.

A:  $1s^2 2s^2 2p^6$ B:  $1s^2 2s^2 2p^6 3s^2 3p^5$ C:  $1s^2 2s^2 2p^6 3s^1$ D:  $1s^2 2s^2 2p^6 3s^2 3p^3 4s^1$ 

- (a) a. Which element has the valency 1? [1]
- (b) b. Which element has the valency 0? [1]
- (c) c. Which element has incorrect configuration? [1]

2. Copper sulphate is a hydrated salt having the formula  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ .

How does it react with conc. sulphuric acid? Which property of conc. sulphuric acid is employed here? [2]

3. Analyze the metals given below and answer the following questions.

Aluminium, Platinum, Zinc, Iron, Gold, Sodium

- (a) a. Name the metals which are less reactive than hydrogen? [1]
- (b) b. Name two metals which are separated by reduction using electricity? [1]
- (c) c. Identify two metals which are separated by reacting its ore with carbon. [1]

4. "As temperature increases, the random movement of gas molecules also increases". [3]

- (a) What is the reason for it?
- (b) Will it have any effect on volume of gas?
- (c) Which gas law is related to this?

5.

- (a) What is the reducing agent in the reactions occurring in a blast furnace during the extraction of iron? Show the reaction. [2]
- (b) What is the name of molten iron that comes out of the blast furnace?

- [1]
6. Write the names of the following ethers. [1]
- (a)  $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-O-CH}_3$  [1]
- (b)  $\text{CH}_3\text{-CH}_2\text{-O-CH}_2\text{-CH}_2\text{-CH}_3$  [1]
7. Write the structural formula of 2-methyl-1-chloropropane and the IUPAC name of its position isomer. [2]
8. How is ethanoic acid prepared from ethanol? [2]
9. Complete the following equations: [3]
- (a)  $\text{CH}_4 + 2\text{O}_2 \rightarrow \dots\dots\dots$
- (b)  $\text{CH}_3\text{Cl} + \text{Cl}_2 \xrightarrow{\text{sunlight}} \dots\dots\dots$
- (c)  $\text{C}_2\text{H}_2 + \text{H}_2 \rightarrow \dots\dots\dots$
10. Write the general formula of the following. [4]
- (a) Haloalkane
- (b) Mono carboxylic acid
- (c) Alkenes
- (d) Alcohol (Monohydric)
- 11.
- (a) An inflated balloon is burst when it is placed in sunlight. Explain the reason. Which gas law is related to it? [3]
- (b) The volume of 22 g  $\text{CO}_2$  at 273 K and at 1 atm pressure is 11.2 L. Prove that this statement is true. [2]
- 12.
- (a) Convert into mole: 14 g of oxygen gas. [2]
- (b) Verify by calculating that 5 moles of  $\text{CO}_2$  and 5 moles of  $\text{H}_2\text{O}$  do not have the same mass. [3]
13. When thermoplastics are heated, do they undergo physical change or chemical change? Justify your answer. [3]