

Sl. No. 1049575

SSLC EXAMINATION, MARCH - 2023

CHEMISTRY

(English)

Time : 1½ Hours

Total Score : 40

Instructions :

- The first 15 minutes is cool-off time.
- You may use the time to read the questions and plan your answers.
- Answer only on the basis of instructions and questions given.
- Consider score and time while answering.

Score

SECTION - A

Answer any 4 questions from 1 to 5. Each question carries 1 score.

1. The monomer of Polyvinyl Chloride is _____ . 1
2. In an atom, four electrons are present in the p subshell of its M Shell. How is it represented ? 1
[2p⁴, 4p⁴, 3p⁴, 5p⁴]
3. Find the relation and fill up : 1
C_nH_{2n+2} : Alkane
C_nH_{2n-2} : _____
4. Phenolphthalein is pink in colour in the solution of ammonia in water. This shows that ammonia is _____ in nature. 1
5. Which is the electrolyte used in electroplating copper on an iron ring ? 1
[FeSO₄, AgNO₃, ZnSO₄, CuSO₄]

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SECTION - B

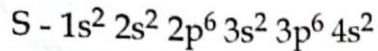
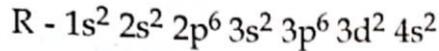
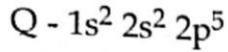
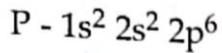
Answer any 4 questions from 6 to 10. Each question carries 2 scores.

6. Choose the suitable method used in each of the following processes from the bracket.
[Liquation, Leaching, Froth floatation, Distillation]
- (a) Concentration of sulphide ores. 1
- (b) Refining of metals with low boiling points. 1
7. (a) How many GMM is present in 90 g water [H₂O] ? 1
- (b) Find the number of molecules present in it. 1
- [Hint : Molecular mass of water = 18]
8. Ethanol is an alcohol which is extensively used for industrial purposes.
- (a) What is rectified spirit ? 1
- (b) How does rectified spirit differ from absolute alcohol ? 1
9. Concentrated ores are converted into their oxides by two processes.
- (a) Name of the process carried out in the presence of air is _____. 1
- (b) Which process is used in the case of carbonate ore ? 1
10. Concentrated sulphuric acid forms nitric acid on reaction with nitrates. The chemical equation of this reaction is given below.
- $$\text{NaNO}_3 + \text{H}_2\text{SO}_4 \rightarrow \text{NaHSO}_4 + \text{HNO}_3$$
- (a) Which sodium salt is used to get hydrochloric acid [HCl] in the same manner ? 1
- (b) Write down the chemical equation of this reaction. 1

SECTION - C

Answer any 4 questions from 11 to 15. Each question carries 3 scores.

11. Subshell electronic configurations of a few elements are given. One of them is a noble gas. [Symbols are not real]

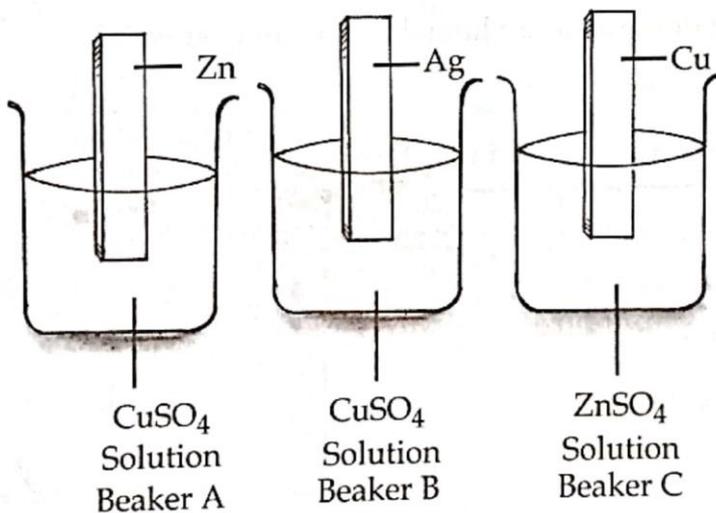


Answer the following questions.

- (a) Which element has the highest Ionisation Energy ? 1
- (b) Which element belongs to s-block ? 1
- (c) Which element shows variable oxidation state ? 1

12. Observe the figure.

Metal rods are dipped in salt solutions taken in three beakers.

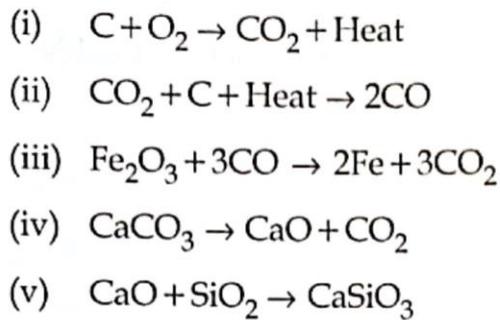


- (a) In which beaker does displacement reaction take place ? Give reason. 2
- (b) Write down the chemical equation of the oxidation reaction taking place in this beaker. 1

[Hint : Order of reactivity $\text{Zn} > \text{Cu} > \text{Ag}$]

P.T.O.

13. Chemical equations of the reactions taking place in blast furnace during the industrial production of iron are given below.

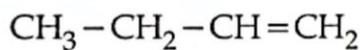


Answer the following questions.

- (a) Which compound acts as the reducing agent ?
 (b) What is the function of CaO in the production of iron ?
 (c) Which is the slag formed here ?

1
1
1

14. The structural formula of an organic compound is given.



- (a) Write down the IUPAC name of this compound.
 (b) What is its molecular formula ?
 (c) What is the molecular formula of the adjacent homologue coming after it ?

1
1
1

15. Complete the table using names of reactions given in the box.

Polymerisation
Combustion
Addition reaction
Substitution reaction
Thermal cracking

Chemical equation	Name of reaction
$CH_3 - CH = CH_2 + H_2 \rightarrow CH_3 - CH_2 - CH_3$	____ (a) ____
$CH_3 - CH_3 + Cl_2 \rightarrow CH_3 - CH_2 - Cl + HCl$	____ (b) ____
$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$	____ (c) ____

1
1
1

SECTION - D

Answer any 4 questions from 16 to 20. Each question carries 4 scores.

16. The atomic number of element X is 8.

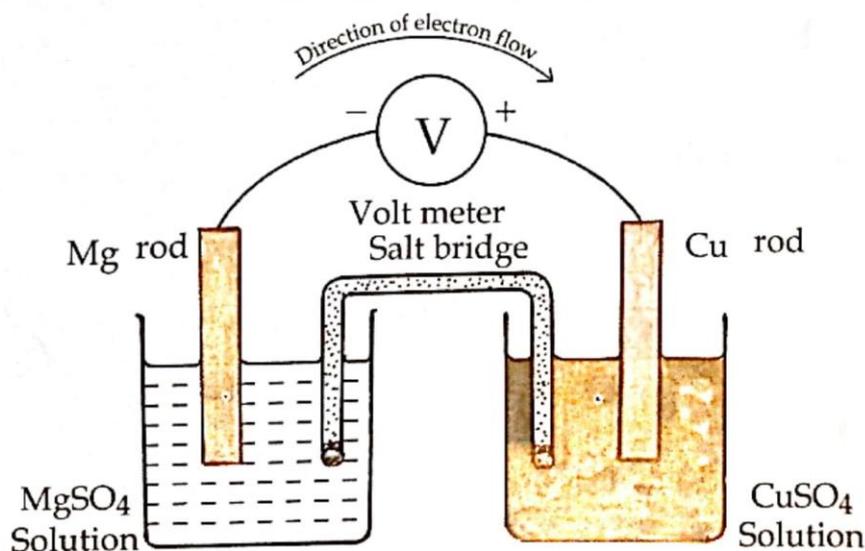
- (a) Write the subshell electronic configuration of X. 1
- (b) Find its group number and period number. 1
- (c) Write the chemical formula of the compound formed when element X reacts with Aluminium (Al). 2
- [Hint : Valency of Al = 3]

17. The data given in the table shows the relation between the volume and temperature of a definite mass of gas. [Pressure is kept constant]

Volume (V)	Temperature (T)	$\frac{V}{T}$
600 mL	300 K	<u>(x)</u>
800 mL	<u>(y)</u>	2

- (a) Find 'x' and 'y'. 2
- (b) Which gas law is applied here? 1
- (c) An inflated balloon is kept in Sunlight, it will burst. Give reason. 1

18. The given diagram represents a galvanic cell.

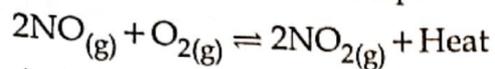


[Hint : Order of reactivity : Mg > Cu]

- (a) What is the energy change taking place in galvanic cells? 1
- (b) At which electrode does oxidation takes place in galvanic cells? 1
- (c) Identify the cathode in the given cell. 1
- (d) Write down the chemical equation of the reaction taking place at the cathode in the given cell. 1

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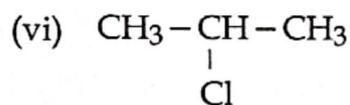
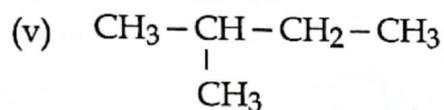
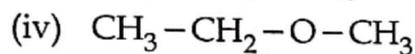
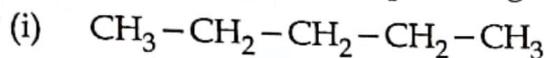
19. A reversible reaction at equilibrium is given.



Answer the following :

- | | |
|---|---|
| (a) How does increase in temperature influence the amount of product formed ? | 1 |
| (b) What change is to be made in pressure to get more product ? | 1 |
| (c) How does increase in concentration of oxygen influence the rate of forward reaction ? | 1 |
| (d) What is the function of a catalyst in reversible reactions ? | 1 |

20. Examine the organic compounds given below.



- | | |
|---|---|
| (a) Identify the isomeric pairs. | 3 |
| (b) Which is the functional isomer pair ? | 1 |

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