

SSLC EXAMINATION, MARCH-2019

Time: 1^{1/2} Hours

CHEMISTRY

Total Score : 40

SECTION - A

1. Propene
2. Optic glass/ Flint glass/ Lead glass
3. 14g Nitrogen
4. Froth floatation method
5. Magnesium oxide (MgO)

SECTION - B

6.
 - a. $1s^2 2s^2 2p^6 3s^2 3p^3$
 - b. Period – 3, Group – 15
7.
 - a. Copper (reddish brown colour) is deposited on iron nail.
 - b. $Fe \rightarrow Fe^{2+} + 2e^-$
8.
 - a. Molarity, $M = \frac{n}{V}$
 $n = \frac{4}{40} = 0.1 \quad \therefore M = \frac{0.1}{1} = 0.1$
 Molarity = 0.1
 - b. By dissolving 4g NaOH in 100ml of water.
9.
 - a. Roasting is the process of heating the concentrated ore at a temperature below its melting point in a current of air.
 - b. Sulphur and phosphorous are removed as their oxides.
10.
 - a. Industrially, ethanoic acid is manufactured by treating methanol with carbon monoxide in the presence of catalyst.

$$\begin{array}{ccc} \text{CH}_3\text{-OH} + \text{CO} & \xrightarrow{\text{Catalyst}} & \text{CH}_3\text{-COOH} \\ \text{Methanol} & & \text{Ethanoic acid} \end{array}$$
 - b. (Any one)
 - In the manufacture of rayon.
 - In the rubber (for coagulation of rubber from latex) and silk industry.
 - Dilute ethanoic acid in the form of vinegar is a food preservative.

SECTION - C

11.
 - a. No. of moles of reactant – 2
No. of moles of product – 2
 - b. Pressure has no effect.
Here, there is no change in the number of moles of the reactants and the products as a result of forward and backward reaction. In such reaction pressure will not have any effect on the equilibrium state.
12.
 - a. No. of C- atoms in main chain = 5
Word root = pent (pentane)
 - b. Branch = methyl

Position = 3

c. 3 – Methylpentane

13.

a. $1 \text{ mol N}_2 + 3 \text{ mol H}_2 \rightarrow 2 \text{ mol NH}_3$

b. $28 \text{ g N}_2 = 1 \text{ mol N}_2$

1 mol N_2 requires 3 mol H_2

\therefore Mass of $\text{H}_2 = 3 \times 2 \text{ g} = 6 \text{ g}$

c. $22.4 \text{ L N}_2 = 1 \text{ mol N}_2$

When 1 mol N_2 undergo reaction 2 mol NH_3 is formed.

\therefore Volume of NH_3 formed at STP = $2 \times 22.4 = 44.8 \text{ L}$

14.

a. Mg and Cu

b. Anode – Mg in MgSO_4 Cathode – Cu in CuSO_4

c. $\text{Mg} + \text{Cu}^{2+} \rightarrow \text{Mg}^{2+} + \text{Cu}$

15.

a. The melting point of alumina is very high. Cryolite is added to alumina to reduce its melting point and increase its electrical conductivity.

b. Cation - Al^{3+} , Anion - O^{2-}

c. $\text{Al}^{3+} + 3\text{e}^- \rightarrow \text{Al}$

SECTION – D

16.

a. The test tube in which zinc powder is taken.

b. When the solid reactants are made into small pieces or powder, their surface area increases. More reactant molecules come in contact and take part in collision resulting in an increase in the number of effective collisions according to collision theory. Thus the speed of the reaction increases.

c. A single large piece of firewood burns in air slowly but if it is cut into small pieces, the burning takes place rapidly.

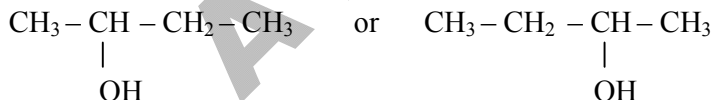
17.

a. $\text{C}_4\text{H}_{10}\text{O}$

b. Functional isomerism

c. Compounds having same molecular formula but having difference in their functional groups are called functional isomers and the phenomenon is called functional isomerism.

d. Butan – 2 – ol



18.

a. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$

b. Group – 1

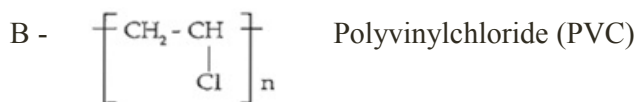
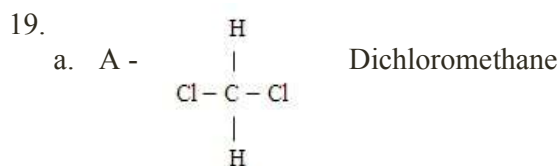
Period – 4

Block – s

Oxidation state - +1

c. (Any one)

- Low ionization energy
- Low electronegativity
- Metallic nature
- Lose electrons in chemical reactions
- Compounds are mostly ionic
- Oxides and hydroxides are basic in nature



- b. Substitution reaction
c. Polyvinyl chloride (PVC) and commonly used for making pipes

20.

- a. Antipyretics - To lower body temperature
Antibiotic - To destroy the disease causing microorganisms and prevent their growth
- b. Unhealthy practices regarding the use of medicines. (Any two)
- Self-treatment.
 - Over use of medicines.
 - Unnecessary use of medicines.
 - Profit motives.
 - Faulty diagnosis.
 - Irregularity in using medicines as per the timing prescribed by the doctors.
 - Taking medicines even after the prescribed period.
 - Taking medicines prescribed for another person.



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