MALAPPURAM

SSLC PRE MODEL EXAMINATION – 2023

MPM-104 A

SSLC –PRE MODEL EXAM - MPM

Time :- 45 minutes

CHEMISTRY

(English)

Total Score :- 20

Answer any Two questions from 1 to 3. Each questions carries 1 scores. (2 x 1 = 2)

1. Maximum number of electrons that can be accommodated in the p subshell is.....
   (2, 6, 8,18) (1)
2. The atomic mass of nitrogen is 14. Which of the following samples contains 6.022 x10 ^{23} nitrogen molecules. (Hint.. Nitrogen is a diatomic molecule.)
   (14g, 28g, 7g, 1g) (1)
3. NaCl solution is electrolysed. Which substance is obtained at cathode?
   (Na, H_2, O_2, Cl_2) (1)

Answer any Two questions from 4 to 6. Each questions carries 2 scores. (2 x 2 = 4)

4. The outermost electronic configuration of an element is $2s^2$ $2p^6$.
   a) What is the atomic number of the element. (1)
   b) Write the complete electronic configuration of the element. (1)

5. a) Analyse the table and calculate x & y (1)

Volume(V)	*Temperature(T)*	*V/T*
400 mL	200 K	.....(x).....
...(y).....	300 K	2

   b) Which is the gas law related to this? (1)
6. a) Which metal among the given metals is highly reactive with cold water? (1)
   (Na, Al, Mg, Zn)
   b) Which is the gas produced by the above reaction? (1)

Answer any Two questions from 7 to 9. Each questions carries 3 scores. (2 x 3 = 6)

7 The element X has the atomic number 26.
   a) Write down the complete electronic configuration of the element. (1)
   b) Identify the group and period of the element. (1)
   c) Write down the electronic configuration of X^{2+} ion. (1)

8. a) Calculate the mass of 112L CO_2 gas kept at STP. (2)
   b) How many molecules of CO_2 present in it? (1)
   Hint : (Atomic masses of C=12, O=16)

9. Copper is refined by electrolysis. During this process

a. Which is the anode? (1)

b. Write the equations of the reactions that takes place at cathode and anode. (2)

Answer any Two questions from 10 to 12. Each questions carries 4 scores. (2 x 4 = 2)

10). Copper has the electronic configuration

Cu - $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^1\ 3d^{10}$

a) What are the ions of copper present in the following compounds.

i) CuCl ii) $CuCl_2$ (Hint : Oxidation state of Cl is $^-1$) (1)

b) Write any two characteristics of transition elements. (2)

c) What is the colour of Potassium permanganate solution. (1)

11) a) Identify the gas laws related to the following statements.

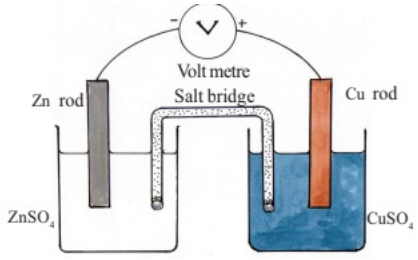
i) A balloon is being inflated. (1)

ii) When an inflated balloon is immersed in water, it's size decreases. (1)

b) Consider a gas has the volume 4L at 2 atm pressure at constant pressure.

What will be the volume of same gas at 4 atm pressure? (2)

12). Answer the following questions after analysing the picture.



a. At which electrode oxidation occurs? (1)

b. Write the equation of the reduction reaction occurs here. (1)

c. Electron flow starts from which electrode? (1)

d. We want to reverse the direction of electron flow.

Which electrode out of Ag, Mg, and Pb should be used instead, of Cu (1)