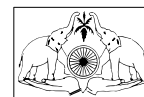




DIET MALAPPURAM & VIJAYABHERI MALAPPRAM
SSLC PRE- MODEL EXAMINATION , MARCH 2022



Time: 1.45hr

SET- 3
CHEMISTRY

Max. Score: 40

PART-I

A section

(From 1 to 6 answer any 4 questions. One mark each.) (4x1=4)

1. Which is the main energy level in which 3s subshell is occupied?
2. What is the number of molecules present in 1GMM of any substance?
3. Which is the gas evolved during the reaction of Mg with diluted HCl?
4. Find out the relation and fill up the gap
Iron : Haematite : Fe_2O_3
Aluminium : Bauxite :
5. Which is the drying agent used in the laboratory preparation of ammonia?
6. What is the name of homologous series, its general formula is represented by C_nH_{2n} ?

B section.

(From 7 to 9 answer all questions. One mark each.) (3x1=3)

7. What is the oxidation state of Manganese (Mn) in Manganese dioxide (MnO_2) ?
8. The compounds of same molecular formula but different structural formula is known as
9. Which is the main shell to which the final electron filling takes place in f-block element?

PART II

A section

(Answer the question given below. 2 marks) (1x2=2)

10. The following is the chemical equation of changing an ore of Zinc (Zn) into its oxide form
 $\text{ZnCO}_3 + \text{Heat} \rightarrow \text{ZnO} + \text{CO}_2$
 - a) Name the ore of Zn used here? (1)
 - b) What is the name of this process? (1)

B section

(From 11 to 12 answer any one. 2 marks) (1x2=2)

11. What is meant by molar volume?. What is the molar volume of a gas at STP?. (2)
12. The first stage of concentration of bauxite is the dissolution of bauxite in hot NaOH solution.
 - a) What is the name of this process? (1)
 - b) Which is the product formed in this stage? (1)

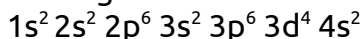
PART-III

A section

(From 13 to 16 answer any 3. 3 marks each)

(3x3=9)

13. Subshell electronic configuration of Chromium (Cr) is given below.



- Correct the given subshell electronic configuration. (1)
- Which is the block and group of this element in the periodic table.? (1)
- Write down the subshell electronic configuration of Cr^{+2} .? (1)

14. An Iron nail is dipped in copper sulphate ($CuSO_4$) solution.

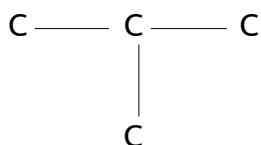
- Write the observation of this experiment.? (1)
- What is the name of this chemical reaction.? (1)
- Write down the chemical equation of this reaction.? (1)

15. The equation of chemical reaction in the industrial preparation of ammonia (NH_3) is given below.



- What is the name of this process.? (1)
- What is the optimum temperature of this process.? (1)
- Write the equation of backward reaction. (1)

16. The carbon chain of a hydro carbon compound is given.



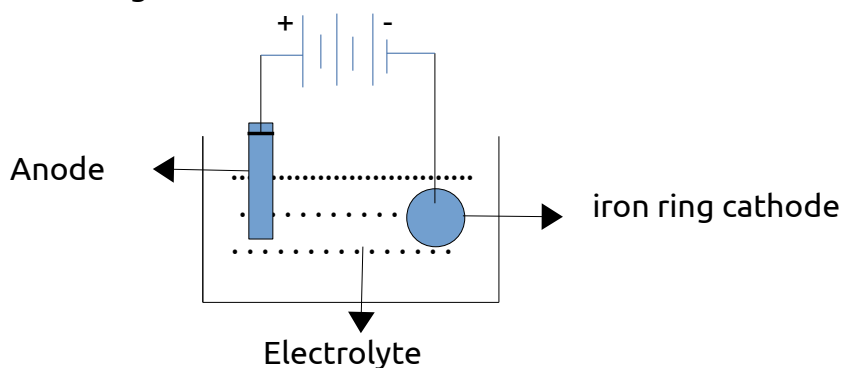
- Complete the structure by adding hydrogen atoms to each carbon. (1)
- What is the IUPAC name of this compound.? (1)
- What is the name of homologous series to which this compound belongs.? (1)

B section

(Answer the question given below. 3 marks)

(1x3=3)

17. The following figure is the arrangement to make a coating of copper on an iron ring.



- Name this process ? (1)
- Which metal is used here as anode.? (1)
- Name the electrolyte used here.? (1)

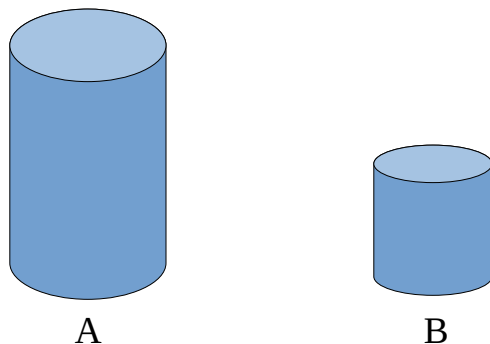
PART- IV

A section

(From 18 to 20 answer any 2. 4 marks each)

(2x4=8)

18. The gas filled in cylinder 'A' is transferred into cylinder B at constant temperature. Answer the questions given below.



- What is the change in pressure of the gas.? (1)
- What is the change in volume of gas.? (1)
- What is the relation between pressure and volume of gas at constant temperature.? (1)
- Name the gas law related with this.? (1)

19. Some chemical reactions in blast furnace are given below. Answer the following questions.

- $C + CO_2 \rightarrow 2 CO$
- $CaO + SiO_2 \rightarrow CaSiO_3$
- $Fe_2O_3 + 3 CO \rightarrow 2 Fe + 3CO_2$

- Which is the reaction of slag formation? (1)
- Name the flux in blast furnace.? (1)
- Write the equation of reduction reaction .? (1)
- Name the reducing agent in blast furnace.? (1)

20. The subshell electronic configurations of some elements are given below.

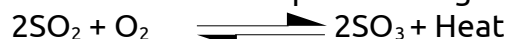
- $1s^2 2s^2 2p^6 3s^2 3p^1$
- $1s^2 2s^2 2p^6 3s^1$
- $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^2$

Answer the following questions.

- Which are the representative elements.? (1)
- Which is the transition element.? (1)
- Write any two characteristics of transition element.? (2)

B section**(From 21 to 22 answer any one. 4 marks)****(1x4=4)**

21. The chemical reaction of an important stage of contact process is given below.



- a) Name the main product of this process? (1)
 b) What is the optimum temperature used in this stage.? (1)
 c) Which is the catalyst used in this process.? (1)
 d) What is the change in rate of forward reaction when excess air is passed to the system.? (1)

22. The structural formula of an organic compound is given below.



- a) What is the name of functional group of this compound.? (1)
 b) What is the IUPAC name of this compound.? (1)
 c) Write down the structural formula and IUPAC name of functional isomer of this compound.? (2)

PART-V**A section****(From 23 to 24 answer any one. 5 marks)****(1x5 =5)**

23. Match the chemical reactions given in the table.

CHEMICAL EQUATIONS	NAME OF CHEMICAL REACTION
$\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O} + \text{Heat}$	Thermal cracking
$\text{CH}_2 = \text{CH}_2 + \text{HCl} \rightarrow \text{CH}_3 - \text{CH}_2 \text{Cl}$	Substitution reaction
$\text{CH}_3 - \text{CH}_2 - \text{CH}_3 + \text{Heat} \rightarrow \text{CH}_4 + \text{C}_2\text{H}_4$	Combustion
$\text{CH}_4 + \text{Cl}_2 + \text{Sun light} \rightarrow \text{CH}_3 \text{Cl} + \text{HCl}$	Polymerisation
$n [\text{CF}_2 = \text{CF}_2] \rightarrow [-\text{CF}_2 - \text{CF}_2-]_n$	Addition reaction

24. Atomic mass of nitrogen and hydrogen are given.

$$\text{N} = 14, \text{H} = 1$$

- a) Find out the molecular mass of ammonia (NH₃).? (1)
 b) What is the mass of 1GMM ammonia.? (1)
 c) Calculate the number of molecules present in 51g of ammonia.? (2)
 d) What is the number of atoms present in 1 mole ammonia.? (1)
