Reg. No.

Name :

W 108 E

DIET WAYANAD
SSLC PRE-MODEL EXAMINATION - MARCH 2022
CHEMISTRY

Time : $1\frac{1}{2}$ Hours **Total Score : 40**

Instructions

- 15 minutes is given as cool-off time.
- Use cool-off time to read the questions and plan your answers.
- Attempt the questions according to the instructions.
- Keep in mind , the score and time while answering the questions.

PART - I

A. Answer any 4 of questions from 1 to 6 (1 score each) **(4x1 = 4)**

1. Which among the following subshells have highest energy level ?

   (2p, 2s, 3d, 4s)

2. Number of molecules present in 44 g of CO_2 is ————

   (Hint: molecular mass of CO_2 is 44)

3. Which of the following metal react with cold water

   (Mg, Na, Cu)

4. Identify the relation and complete

   Zinc : Calamine

   Aluminium : .....

5. Maximum number of electrons that can be accomodated in f subshell is .....

6. ..... is used as drying agent in the laboratory preparation of Ammonia.

B. Answer all questions from 7 to 9 (1 score each) **(3x1 = 3)**

7. Which of the following is a property of f block elements

   a. High electronegativity

   b. High ionisation energy

   c. Used as fuels in nuclear reactors

   d. Non metals.

8. Which substance is used for identifying sulphate salts

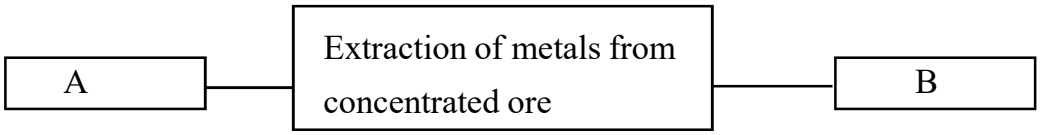
($BaCl_2$, $AgNO_3$, NaCl)

9. At STP one mole of NH_3 gas will occupy a volume of..... litres

PART - II

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

10.Complete the stages of metallurgy



B. Answer any 1 question from 11 and 12(2 score each) (1x2 = 2)

11. i). $CH_3 - O - CH_2 - CH_3$

ii) $CH_3 - CH_2 - CH_2 - OH$

a. Which type of isomerism is shown by these compounds

b. Write the structural formula of the position isomer of the compound 'ii'

12. Take some copper sulphate in a watch glass and add few drops of con.sulphuric acid

a. What is your observation?

b. Which property of sulphuric acid is shown here?

PART - III

A. Answer any 3 of questions from 13 to 16 (3 score each) (3x3 = 9)

13. Subshell electronic configuration of an element X is given below

$1S^2$ $2S^2$ $2P^6$ $3S^2$ $3P^4$

a. write the atomic number of X

b. Identify the block

c. Find out the group and period

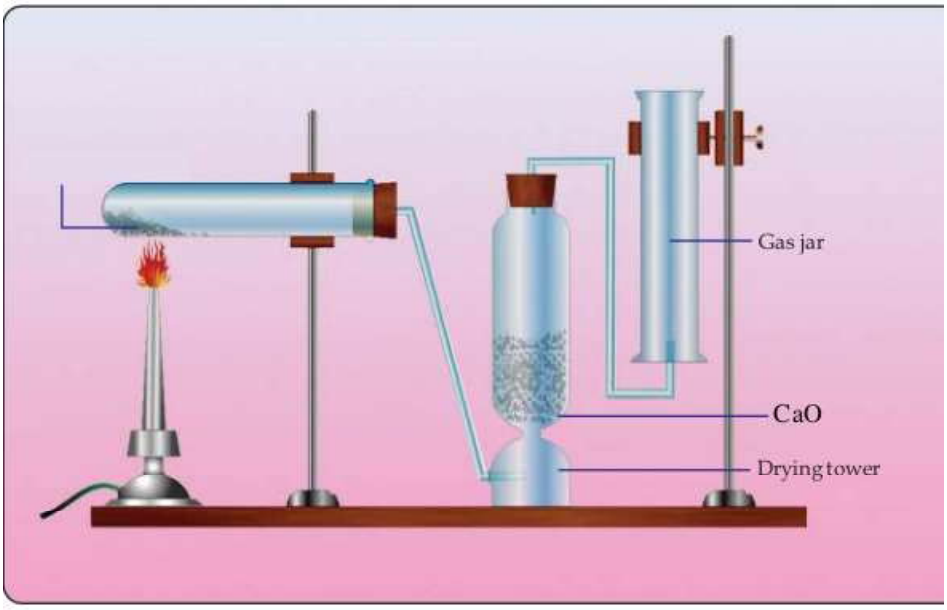
14. $CH_3 - CH_2 - CH_2 - \underset{\displaystyle CH_3}{\underset{|}{CH}} - CH_3$

i) How many carbon atoms are there in the main chain

ii) Write the name of branch

iii) Write the IUPAC name of this compound

15. The arrangement of laboratory preparation of ammonia is given below



i. Write the name of reactants used here

ii. The out coming gas is passing through drying tower. Give reason

iii. Ammonia gas is collected in an inverted glass jar. Give justification

16. $N_2(g)+3H_2(g) \rightleftharpoons 2NH_3(g)$

How does the following factors influence the rate of forward reaction

i. Temperature is decreased

ii. Pressure is decreased

iii. Ammonia is constantly removed from the system

B. Answer the following question. Carries 3 scores. **(1x3 = 3)**

17. The industrial production of aluminium is known as Hall Heroult process.

i. Name the anode which is used in the electrolysis of alumina

ii. Write the reaction in cathode

iii. The alumina is dissolved in molten cryolite during the electrolysis. Give the reason

PART - IV

A. Answer any two questions from 18 to 20. Each carries 4 scores. **(2x4 = 8)**

18. Some metal rods and salt solutions are given below

[Mg, $ZnSO_4$, Cu, Zn, $CuSO_4$, $AgNO_3$]

i) Choose suitable materials and draw a galvanic cell

ii) Name the anode of this cell

iii) Write the reaction take place in anode

19. Match the following

Magnetic separation	Bauxite
Leaching	Tin
Distillation	Magnetite
Liquation	Mercury

20. $CH_3 - CH_2 - CH_2 - \underset{\displaystyle OH}{\underset{|}{CH}} - CH_3$

i) Write the functional group present in the compound.

ii) The compounds having this functional groups are generally known as.

iii) Write the IUPAC name of this compound.

iv) Write the condensed formulae of butan-1-ol.

B. Answer any 1 questions from 21 to 22 (4 score each) **(1x4 = 4)**

21. Let us consider the electrolysis of molten sodium chloride,

i) Name the ions present in molten sodium chloride.

ii) Which is the gas liberated at anode

iii) Which is the metal deposited at the cathode

iv) Name the energy change happening in electrolytic cells.

22. Ethanol is industrially prepared from mollasses

$$C_{12}H_{22}O_{11} + H_2O \xrightarrow{\text{Invertase}} C_6H_{12}O_6 + \underset{A}{\text{.....}}$$

$$C_6H_{12}O_6 \xrightarrow{\text{.....B.....}} CH_3\text{-}CH_2\text{-}OH + 2CO_2$$

i) Find out A and B.

ii) 8-10 % strong ethanol is known as .....

iii) A mixture of petrol and absolute alcohol is known as .....

PART - V

A. Answer any one question from 23 to 24 (4 scores) **(1x5 = 5)**

23. Fill in the blanks suitably. (Students may not draw columns)

Reactant	Product	Name of Reaction
$CH_4 + Cl_2$	$CH_3Cl + HCl$	.....(a).....
$CH_2 = CH_2 + H_2$	.....(b).....	Addition reactions
$CH_4 + 2O_2$	$CO_2 + 2H_2O$	.....(c).....
$CH_3\text{-}CH_2\text{-}CH_3$	$CH_2 = CH_2 + CH_4$	.....(d).....
.....(e).....	$[CH_2\text{-}CH_2]_n$	Polymerisation

24. Fill in the blanks suitably. (Students may not draw columns)

Compound	Molecular mass	Amount taken	Number of moles	Number of molecules
NH_3	17	34g	.....(a).....	$2 \times 6.0222 \times 10^{23}$
N_2	28	.....(b).....	3	.....(c).....
H_2O	.....(d).....	18g	1	6.022×10^{23}
H_2	2	10g	.....(e).....	$5 \times 6.022 \times 10^{23}$

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