





## SECTION B

Attempt any eight of the following

(16)

Q3. Calculate the number of moles of ammonia ( $\text{NH}_3$ ) gas in a volume  $67.2 \text{ dm}^3$  of it measured at S.T.P.

Q4. Write short note on Principal quantum number.

Q5. Calculate the oxidation number of Nitrogen in  $\text{HNO}_3$ .

Q6. Give reason : Ionization enthalpy increases across period

Q7. What is the action of water on the following metals.

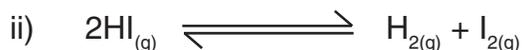
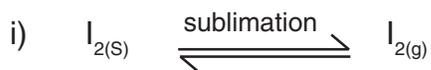
i) Na                      ii) Ca

Q8. Write electronic configuration of

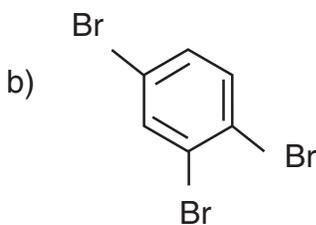
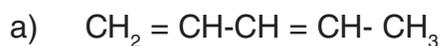
i) Al ( $Z = 13$ )          ii) P ( $Z = 15$ )

Q9. Define : i) Isobar      ii) Isotones

Q10. Identify the type of equilibrium



Q11. Write the IUPAC names of the following compounds



Q12. Write the molecular formula of alkane for  $n=4$ . Draw its chain isomers.

Q13. What are p-block elements?

Write the name of allotropes of phosphorous.

Q14. What is the action of following reagents on Zn metal:

a) NaOH                      b) HCl

## SECTION C

Attempt any Eight of the following

(24)

Q15. Write any two properties of metals

Find the formula mass of  $\text{Cu}(\text{NO}_3)_2$

(Atomic mass of Cu = 63.5, N = 14, O = 16)

Q16. Explain anomalous behaviour of Chromium ( $Z = 24$ ) with respect to electronic configuration.

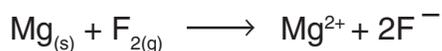
Q17. Define : Molarity

A solution is prepared by adding 2g of a substance A to 18g of water. Calculate mass percent of solute.

Q18. Draw neat labelled diagram of apparatus of simple distillation.

Q19. Explain s-p overlap with suitable example.

Q20. Identify whether the following reaction is redox or not. Justify your answer.



Q21. Draw the outline of periodic table.

Q22. Write any two examples of antiseptic. Draw the structure of salicylic acid. Write its IUPAC name.

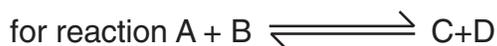
Q23. What is catenation?

Draw the structure of following compounds.

a) Boron trichloride ( $\text{BCl}_3$ )

b) Aluminium chloride ( $\text{AlCl}_3$ ).

Q24. Derive an equation for equilibrium constant ( $K_c$ ),



Q25. State : Boyle's Law

Write the types of intermolecular forces of attraction?

Q26. Identify giving reasons whether the following compounds are aromatic or not

a)



b)



## SECTION D

Attempt any three of the following

(12)

- Q27. With the help of hybridization explain formation of methane molecule.
- Q28. a) Differentiate between adsorption and absorption.  
b) Write a note on : Chemisorption
- Q29. a) The volume of given mass of gas at  $0^{\circ}\text{C}$  is  $2\text{dm}^3$ . Calculate the new volume of gas at constant pressure when temperature increased by  $10^{\circ}\text{C}$ .  
b) Convert  $-40^{\circ}\text{C}$  into Kelvin
- Q30. a) How will you prepare ethyne from 1,2 - Dibromomethane.  
b) Write the balanced chemical equation for the action of following reagents on benzene.  
i)  $\text{Cl}_2$  in presence of anhydrous  $\text{AlCl}_3$ .  
ii) Fuming  $\text{H}_2\text{SO}_4$

Q31. Write two uses of acetylene

What is the action of following reagents on ethene

- i)  $\text{HBr}$   
ii) alkaline  $\text{KMnO}_4$   
iii)  $\text{Cl}_2$  in presence of  $\text{CCl}_4$  at room temperature.



