SECOND REVISION TEST - 2025

Standard XI Reg No: 1 1 A 0 2 2

CHEMISTRY

Time : 3.00 hrs *Marks : 70*

Part - I

I. **Choose the correct answer:** 15 x 1 = 15

1. Which of the following compounds has / have percentage of carbon same as that in ethylene (C_2H_4)
   a) Propene b) Ethyne c) Benzene d) Ethane
2. What is the maximum number of electrons that can be associated with the following set of quantum numbers? n = 3, l = 1 and m = –1
   a) 4 b) 6 c) 2 d) 10
3. How does electron affinity change when we move from left to right in a period in the periodic table?
   a) Generally increases b) Generally decreases
   c) Remains unchanged d) First increases and then decreases
4. Non-stoichiometric hydrides are formed by
   a) Palladium, Vanadium b) Carbon, Nickel
   c) Manganese, Lithium d) Nitrogen, Chlorine
5. Which of the following compound is called "desert rose"?
   a) CaO b) $CaSO_4.2H_2O$ c) $CaCO_3$ d) $Ca(OH)_2$
6. The temperature at which real gases obey the ideal gas laws over a wide range of pressure is called
   a) Critical temperature b) Boyle temperature
   c) Inversion temperature d) Reduced temperature
7. Heat of combustion is always
   a) Positive b) Negative c) Zero d) Either positive or negative
8. Wnen $\Delta n_g = 0$
   a) Kp = Kc b) Kp > Kc c) Kp < Kc d) Kp = $1/Kc$
9. Which one of the following binary liquid mixtures exhibits positive deviation from Raoult's law?
   a) Acetone + Chloroform b) Water + Nitric acid
   c) HCl + Water d) Ethanol + Water
10. Which of these represents the correct order of their decreasing Bond angle?
    a) $CH_4 > H_2O > NH_3$ b) $H_2O > NH_3 > CH_4$
    c) $CH_4 > NH_3 > H_2O$ d) $NH_3 > H_2O > CH_4$

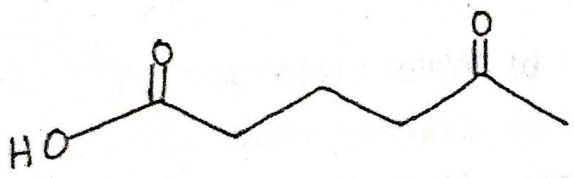
11. $CH_3 CH_2 CHO$ and $CH_3 CO CH_3$ shows
    a) Chain isomerism b) Functional isomerism
    c) Position isomerism d) Metamerism
12. The geometrical shape of carbocation is
    a) Linear b) Tetrahedral c) Planar d) Pyramidal
13. Cis-2-butene and trans-2-butene are
    a) Conformational isomers b) Structural isomers
    c) Configurational isomers d) Optical isomers
14. Assertion : In mono haloarenes electrophilic substitution occurs at ortho and para positions.
    Reason : Halogen atom is a ring deactivator
    a) If both assertion and reason are true, and reason is the correct explanation of assertion
    b) If both assertion and reason are true, but reason is not the correct explanation of assertion
    c) If assertion is true, but reason is false d) If both assertion and reason are false
15. Which of the following is viable particulates?
    a) Smoke b) Bacteria c) Dust d) Mists

Part - II

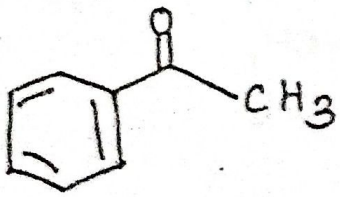
II. Answer any 6 questions. (Q.No.24 is compulsory) 6 x 2 = 12

16. What is the difference between molecular mass and molar mass.
17. State Heisenberg's uncertainty principle.
18. What are the uses of sodium bicarbonate?
19. State zeroth law of thermodynamics.
20. What is reaction Quotient?
21. State Raoult's law.
22. What are electrophiles? Give two examples.
23. Define smog.
24. Write the IUPAC name for the following.

i)



ii)



Part - III

III. Answer any 6 questions. (Q.No.33 is compulsory) 6 x 3 = 18

25. Calculate the molar mass of the following compounds.
    i) Boric acid $[H_3BO_3]$ ii) Sulphuric acid $[H_2SO_4]$
26. Predict the position of the element in periodic table satisfying the electronic configuration. $(n-1)d^2\ ns^2$ where n = 5
27. Explain the types of Hydrogen Bond with one example.
28. Derive ideal gas equation.
29. Define the following : (a) Bond order (b) Bond length
30. Write a note on homologus series.
31. What is Gammexane? How is it prepared?
32. Explain the following :
    i) Preparation of aldehyde from Grignard Reagent
    ii) Sand meyer reaction
33. Calculate the entropy change during the melting of one mole of ice into water at 0°C and 1 atm pressure. Enthalpy of fusion of ice is 6008 J mol^{-1}

Part - IV

IV. Answer all the questions. 5 x 5 = 25

34. a) An organic compound present in vinegar has 40% carbon, 6.6% hydrogen and 53.4% oxygen. Molecular mass of the compound is 60. Calculate the empirical formula and molecular formula. (5)

(OR)

b) i) An atom of an element contains 35 electrons and 45 neutrons. Deduce (3)
    1) The number of protons
    2) Electronic configuration for the element
    3) All the four quantum numbers for the last electron
    ii) Define orbital. (2).

35. a) i) Explain the periodic trend of ionisation potential. (3)
    ii) Give the uses of heavy water. (2)

(OR)

b) Give the systematic names and formula for the following. (5)
    1) Milk of magnesia
    2) Lime
    3) Trona
    4) Soda ash
    5) Caustic potash

36. a) i) Define Joule-Thomson effect. (2)

ii) Write down the Born-Haber cycle for the formation of $CaCl_2$. (3)

(OR)

b) Derive the relation between Kp and Kc. (5)

37. a) i) What are colligative properties? (2)

ii) What type of hybridisations are possible in the following geometries? (3)

1) Octahedral

2) Tetrahedral

3) Square planar

(OR)

b) What is Lassaigne's extract? How to detect nitrogen present in the organic compound? (5)

38. a) i) What is resonance effect? Give example. (3)

ii) Write two examples for ortho-para and meta directing groups. (2)

(OR)

b) i) Compare S_N1 and S_N2 reaction mechanisms? (3)

ii) What is meant by global warming? (2)

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FIRST REVISION TEST - 2025

Time: 3.00 hrs | Standard - XI | Marks:70

CHEMISTRY

PART - I

Choose the correct answer. 15x1=15

1. Carbon forms two oxides, namely carbon monoxide and carbon dioxide. The equivalent mass of which element remains constant?
   a) Carbon b) oxygen
   c) both carbon and oxygen d) neither carbon nor oxygen
2. Two electrons occupying the same orbital are distinguished by
   a) azimuthal quantum number b) spin quantum number
   c) magnetic quantum number d) orbital quantum number
3. Which of the following pairs of elements exhibits diagonal relationship?
   a) Be and Mg b) Li and Be c) Be and B d) Be and Al
4. Assertion : Permanent hardness of water is removed by treatment with washing soda.
   Reason : Washing soda reacts with soluble calcium and magnesium chloride and sulphates in hard water to form insoluble carbonates.
   a) Both assertion and reason are true and reason is the correct explanation of assertion.
   b) Both assertion and reason are true but reason is not the correct explanation of assertion.
   c) Assertion is true but reason is false d) Both assertion and reason are false
5. Flame colour of potassium salt in bunsen burner
   a) Lilac (violet) b) Crimson red c) Apple green d) Yellow
6. The value of the gas constant R is
   a) 0.082 dm^3 atm b) 0.987 cal $mol^{-1}K^{-1}$ c) 8.3 J $mol^{-1}K^{-1}$ d) 8 erg mol^{-1} K^{-1}
7. Molar heat of vapourisation of a liquid is 4.8 k J mol^{-1}. If the entropy change is 16J mol^{-1} K^{-1}, the boiling point of the liquid is
   a) 323K b) 27° C c) 164 K d) 0.3K
8. Match the equilibria with the corresponding conditions
   i) Liquid $\rightleftharpoons$ vapour 3 1) Melting point
   ii) Solid $\rightleftharpoons$ Liquid - M 2) Saturated solution
   iii) Solid $\rightleftharpoons$ vapour - S 3) Boiling point

iv) Solute (s) $\rightleftharpoons$ solution (solute) 4) Sublimation point
5) Unsaturated solution

a) (i) 1 (ii) 2 (iii) 3 (iv) 4 b) (i) 3 (ii) 1 (iii) 4 (iv) 2
c) (i) 2 (ii) 1 (iii) 3 (iv) 4 d) (i) 3 (ii) 2 (iii) 4 (iv) 5

9. According to Raoults law, the relative lowering of vapour pressure for a solution is equal to
a) mole fraction of solvent b) mole fraction of solute
c) number of moles of solute d) number of moles of solvent

10. Bond order of a species is 2.5 and the number of electrons in its antibonding orbital is 3. The no of electrons in its bonding molecular orbital is
a) 8 b) 4 c) zero d) 9

11. The general formula for alkadiene is
a) CnH_{2n} b) CnH_{2n-1} c) CnH_{2n-2} d) CnH_{n-2}

12. Heterolytic fission of C-C bond results in the formation of
a) free radical b) carbanion c) carbocation d) carbanion and carbocation

13. The compound that will react most readily with gaseous bromine has the formula
a) C_3H_6 b) C_2H_2 c) C_4H_{10} d) C_2H_4

14. Chloroform reacts with nitric acid to produce
a) nitro toluene b) nitro glycerine c) chloropicrin d) chloropicric acid

15. Ozone depletion will cause.
a) forest fires b) eutrophication c) bio magnification d) global warming

PART - II

Note: Answer any six questions. Question No. 22 is compulsory. **6x2=12**

16. Write a note on limiting reagent.
17. Define modern periodic law.
18. Write diffusion law.
19. Define Gibb's free energy.
20. Define Le-chatelier principle.
21. Explain Inductive effect with suitable example.
22. Write a balanced chemical equation for the equilibrium reaction for which the equilibrium constant is given by expression.

$$K_c = \frac{[NH_3]^4[O_2]^5}{[NO]^4[H_2O]^6}$$

23. Kolbe's electrolytic reaction.

24. What are degradable and non-degradable pollutants.

PART - III

Answer any six questions. Question number 33 is compulsory. **6x3=18**

25. Differentiate oxidation and Reduction.

26. Give the electronic configuration of Mn^{2+} and Cr^{3+}.

27. Give the uses of Heavy water.

28. Give the similarities between Lithium and Magnesium.

29. What are ideal solutions?

30. Write and draw the structure of IF_7 and SF_6 based on VSEPR theory.

31. What are the conditions for optical activity.

32. What happens when acetylene is passed through red hot tube?

33. Write the structure of the following

a) 2-Chloro-2-methyl propane b) 3-Chloro-but -1 - ene c) Acetaldehyde

PART - IV

Answer all the questions. **5x5=25**

34. a) Balance the following equations by oxidation number method

i) $K_2Cr_2O_7 + KI + H_2SO_4 \rightarrow K_2SO_4 + Cr_2(SO_4)_3 + I_2 + H_2O$

ii) $KMnO_4 + Na_2SO_3 \rightarrow MnO_2 + Na_2SO_4 + KOH$

(OR)

b) Define : Paulis Exclusion Principle and Hund's rule.

35. a) Explain Pauling's method, calculation of ionic radius.

(OR)

b) i) Differentiate ortho and para hydrogen.

ii) How will you prepare plaster of Paris.

36. a) Derive critical constants from Vanderwaals constants.

(OR)

b) List the characteristics of internal energy.

37. a) Derive differential form of Van't Hoff equation.

(OR)

b) Describe the classification of organic compounds based on their structure.

38. a) (i) Explain Wurtz fittig reaction.
(ii) Carbylamine reaction.

(OR)

b) Explain the structure of benzene.

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COMMON HALF YEARLY EXAMINATION - 2024

Standard XI

Reg No 1 1 A 0 2 2

CHEMISTRY

Time : 3.00 hrs **Part - A** ***Marks : 70***

I. Choose the correct answer: **15 x 1 = 15**

1. The equivalent mass of ferrous oxalate is
   a) $\frac{\text{Molar mass of ferrous oxalate}}{1}$ b) $\frac{\text{Molar mass of ferrous oxalate}}{2}$
   c) $\frac{\text{Molar mass of ferrous oxalate}}{3}$ d) none of these
2. The maximum number of electrons in a sub shell is given by the expression
   a) $2n^2$ b) $2l + 1$ c) $4l + 2$ d) None of these
3. In a given shell the order of screening effect is
   a) s > p > d > f b) s > p > f > d c) f > d > p > s d) f > p > s > d
4. Zeolite used to soften hardness of water is hydrate
   a) Sodium aluminium silicate b) Calcium aluminium silicate
   c) Zinc aluminium borate d) Lithium aluminium hydride
5. Which of the following is not an alkaline earth metal?
   a) Ca b) Rb c) Mg d) Ba
6. The critical temperature of CO_2 is
   a) 31.1°C b) 30.1°C c) 21.1°C d) 35.5°C
7. The amount of heat exchanged with the surrounding at constant pressure is given by the quantity
   a) ΔE b) ΔH c) ΔS d) ΔG
8. For NaCl the theoretical molar mass is 58.5 and experimental molar mass is 38.75 then Van't-Hoff factor is
   a) 0 b) 1 c) 1.50 d) 2.5
9. Match the following :

1) $-NO_2$	i) Propyl
2) $-OCH_3$	ii) Amino
3) $-CH_2-CH_2-CH_3$	iii) Methoxy
4) $-NH_2$	iv) Nitro

   a) (1) - (iii), (2) - (ii), (3) - (iv), (4) - (i) b) (1) - (iii), (2) - (iv), (3) - (i), (4) - (ii)
   c) (1) - (iv), (2) - (iii), (3) - (i), (4) - (ii) d) (1) - (ii), (2) - (i), (3) - (iv), (4) - (iii)
10. $2SO_{2(g)} + O_{2(g)} \rightleftharpoons 2SO_{3(g)}$ Δng value of this reaction is
    a) 2 b) –2 c) 1 d) –1
11. Shape of ClF_3 is
    a) Planar triangular b) Pyramidal c) 'T'-shaped d) None of these
12. Which of the following carbocation will be most stable?
    a) $Ph_3\overset{+}{C}-$ b) $CH_3-\overset{+}{C}H_2-$ c) $(CH_3)_2-\overset{+}{C}H$ d) $CH_2=CH-\overset{+}{C}H_2$
13. The compound that will react most readily with gaseous bromine has the formula
    a) C_3H_6 b) C_2H_2 c) C_4H_{10} d) C_2H_4

14. The name of $CFCl_3$ is
a) Freon - 111 b) Freon - 113 c) Freon - 112 d) Freon - 11
15. The pH of normal rain water is
a) 6.5 b) 7.5 c) 5.6 d) 4.6

Part - B

II. Answer any 6 questions. (Q.No.24 is compulsory) 6 x 2 = 12

16. Define gram equivalent mass.
17. Mention the three types of covalent hydrides with example.
18. Give the systematic names for the following : 1) Milk of magnesia 2) Soda ash
19. Define inversion temperature.
20. Which bond is stronger σ or π ? Why?
21. Short note - Hyper conjugation
22. State Markovnikoff's rule with example.
23. What is green chemistry?
24. The molality of the solution containing 45 g of glucose dissolved in 2 kg of water.

Part - C

III. Answer any 6 questions. (Q.No.33 is compulsory) 6 x 3 = 18

25. State Aulbau principle.
26. Define electron affinity.
27. Mention the uses of Plaster of Paris.
28. Write the characteristics of internal energy.
29. Write the Kp and Kc for $2CO_g \rightleftharpoons CO_{2g} + C_s$
30. Draw the Lewis structure for the following : 1) H_2O 2) HNO_3
31. What is Cis and Trans isomerism? Give example.
32. Differentiate Nucleophile and Electrophile.
33. Write the structure of the following compounds :
1) 2-chloro-3-methyl pentane 2) 1-bromo-2,3-dichlorobutane

Part - D

IV. Answer all the questions. 5 x 5 = 25

34. a) i) A compound on analysis gave the following percentage composition C = 54.55%, H = 9.09%, O = 36.36%, determine the emprical formula of the compound. (3)
ii) Distinguish between oxidation and reduction. (2) *(OR)*
b) i) Describe the Pauling method for the determination of ionic radius. (3)
ii) Write short note on spin quantum number. (2)
35. a) Explain ortho and para hydrogen. (5) *(OR)*
b) i) What are the reasons for the anomalous properties of Beryllium? (2)
ii) State Kelvin-Planck statement. (3)
36. a) Derive the values of critical constants in terms of Vander Waals constants. (5) *(OR)*
b) i) Write the limitation of Henry's law. (3)
ii) Define the term "isotonic solution". (2)
37. a) i) Discuss the formation of O_2 molecule using MO Theory. (3)
ii) What is sublimation? Give example. (2) *(OR)*
b) i) Explain the mechanism of SN^1 reaction. (3)
ii) Define inductive effect. (2)
38. a) Write note on (1) Ozonolysis (2) Polymerisation (3) Birch reduction (2+1½+1½) *(OR)*
b) How is acid rain formed? Explain its effects.

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SECOND MID TERM TEST - 2024

Standard XI

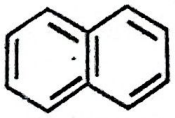
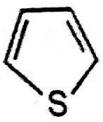
Reg No 1 1 A 0 2 2

CHEMISTRY

Time : 1.30 hrs *Marks : 50*

Part - I

I. Choose the correct answer: 10 x 1 = 10

1. Lithium shows diagonal relationship with
   a) sodium b) magnesium c) calcium d) aluminium
2. In which process, fused sodium hydroxide is electrolysed for extraction of sodium?
   a) Castner's process b) Cyanide process
   c) Down process d) All of these
3. Formula of Gypsum is
   a) $CaSO_4.2H_2O$ b) $CaSO_4.\frac{1}{2}H_2O$ c) $3CaSO_4.H_2O$ d) $2CaSO_4.2H_2O$
4. According to Raoults law the relative lowering of vapour pressure for a solution is equal to
   a) mole fraction of solvent b) mole fraction of solute
   c) number of moles of solute d) number of moles of solvent
5. Which of the following is electron deficient?
   a) PH_3 b) $(CH_3)_2$ c) BH_3 d) NH_3
6. Which one of the following is diamagnetic?
   a) O_2 b) O_2^{2-} c) O_2^+ d) None of these
7. Which of the following molecule contain no π-bond?
   a) SO_2 b) NO_2 c) CO_2 d) H_2O
8. Which of the following compounds will not undergo Friedel-Crafts reaction easily?
   a) Nitro benzene b) Toluene c) Cumene d) Xylene
9. Which one of the following is non aromatic?
   a)  b)  c)  d) 
10. $CH_2\text{-}CH_2$ (Br, Br) $\xrightarrow{(A)}$ $CH \equiv CH$ where A is
    a) Zn b) conc. H_2SO_4 c) alc. KOH d) dil.H_2SO_4

Part - II 5 x 2 = 10

II. Answer any 5 questions. (Q.No.17 is compulsory)

11. Why do alkali metals give colour to flame?
12. How is Plaster of Paris prepared?

13. Give the uses of Gypsum.
14. What are colligative properties?
15. State Henry's law.
16. What is the (π) bond?
17. Draw the Lewis dot structure of SO_3 molecule.
18. State Markovnikoff's rule.

Part - III

III. Answer any 5 questions. (Q.No.22 is compulsory) 5 x 3 = 15

19. What are ideal and non-ideal solutions?
20. What is osmotic pressure?
21. What are hypotonic and hypertonic solutions?
22. Draw the molecular orbital diagram of H_2 molecule.
23. Write Fajan's rule.
24. What is bond order?
25. What is BHC? Write its preparation.
26. Describe the conformers of n-Butane.

Part - IV

IV. Answer all the questions. 3 x 5 = 15

27. a) How sodium hydroxide is prepared commercially by Castner-Kellner process?

(OR)

b) Write the Biological importance of Calcium and Magnesium.

28. a) Write the following reactions.
    i) Friedel-Crafts reaction
    ii) Wurtz-Fittig reaction

(OR)

b) Describe the structure of Benzene.

29. a) How is the molar mass of a solute determined from elevation of boiling point?

(OR)

b) Discuss the formation of N_2 molecule using Mo Theory.

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COMMON QUARTERLY EXAMINATION - 2024

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Standard XI

Reg.No. 1 1 A 0 2 2

CHEMISTRY

Time : 3.00 hrs

Part - I

Marks : 70

I. Choose the correct answer: 15 x 1 = 15

1. The equivalent mass of a trivalent metal element is 9 g eq^{-1} the molar mass of its anhydrous oxide is
   a) 102 g b) 27 g c) 270 g d) 78 g
2. Two electrons occupying the same orbital are distinguished by
   a) azimuthal quantum number b) spin quantum number
   c) magnetic quantum number d) orbital quantum number
3. Identify the wrong statement
   a) amongst the isoelectronic species, smaller the positive charge on the cation smaller is the ionic radius
   b) amongst isoelectric species greater the negative charge on the axion, larger is the ionic radius
   c) atomic radius of the elements increases as one moves down the first group of the periodic table.
   d) atomic radius of the elements decreases as one moves across from the left to right in the 2nd period of the periodic table.
4. Water gas is
   a) $H_2O_{(g)}$ b) $CO + H_2O$ c) $CO + H_2$ d) $CO + N_2$
5. Tritium nucleus contains
   a) 1 p + 0 n b) 2 p + 1 n c) 1 p + 2 n d) none of these
6. The value of the gas constant R is
   a) 0.082 dm^3 atm b) 0.987 cal mol^{-1} k^{-1}
   c) 8.3 J mol^{-1} k^{-1} d) 8 erg mol^{-1} k^{-1}
7. Maximum deviation from ideal gas is expected from
   a) $CH_4(g)$ b) $NH_3(g)$ c) $H_2(g)$ d) $N_2(g)$

8. Heat of combustion is always
   a) positive b) negative
   c) zero d) either positive or negative

9. In an adiabatic process, which of the following is true?
   a) $q = W$ b) $q = 0$ c) $\Delta E = q$ d) $P\Delta V = 0$

10. Solubility of carbon dioxide gas in cold water can be increased by
   a) increase in pressure b) decrease in pressure
   c) increase in volume d) none of these

11. The general formula for alkadiene is
   a) C_nH_{2n} b) C_nH_{2n-1} c) C_nH_{2n-2} d) C_nH_{n-2}

12. The IUPAC name of the compound $CH_3 - \underset{\displaystyle OH}{\underset{|}{CH}} - COOH$
   a) 2 - hydroxy propionic acid b) 2 hydroxy propanoic acid
   c) propane - 2 - ol - 1 oic acid d) 1 - carboxy ethanol

13. How many cyclic and acyclic isomers are possible for the molecular formula C_3H_6O?
   a) 4 b) 5 c) 9 d) 10

14. What is the hybridisation state of benzyl carbonium ion?
   a) sp^2 b) spd^2 c) sp^3 d) sp^2d

15. The geometrical shape of carbocation
   a) linear b) tetrahedral c) planar d) pyramidal

Part - II

II. Answer any 6 questions. (Q.No.24 is compulsory) any 2 **6 x 2 = 12**

16. Define Avogadro number.
17. What is exchange energy?
18. What is effective nuclear charge?
19. How is tritium prepared?
20. State Dalton's law of partial pressures.
21. State the third law of thermodynamics.
22. Define reaction quotient 'Q'

23. What is functional group? Give an example.
24. Give the structure for the following compound:
    i) 1,3 dimethyl cyclohexane ii) 3-ethyl-2-methyl-1-pentene

Part - III

III. Answer any 6 questions. (Q.No.33 is compulsory) any 4 **6 x 3 = 18**

25. What are combination reactions and decomposition reaction? Give example.
26. Derive De-Broglie equation.
27. Define electronegativity.
28. What is compressibility factor Z?
29. What are spontaneous reactions? What are the conditions for the spontaneity of a process?
30. State law of mass action.
31. What is Lassaignes extract (or) Sodium fusion extract?
32. What is Hyperconjucation? Give example.
33. If an automobile engine burns petrol at a temperature of 816°C and if the surrounding temperature is 21°C, calculate its maximum possible efficiency.

Part - IV

IV. Answer all the questions. **5 x 5 = 25**

34. a) i) Give the electronic configuration of Mn^{2+} and Cr^{3+}. (2)
    ii) Calculate the oxidation number of the element (3)
    a) $H_2\underline{S}O_4$ b) $\underline{O}F_2$ c) $\underline{Cr}_2O_7$

(OR)

b) Write notes on assumption of Bohr's atom model. (5)

35. a) i) A compound on analysis gave the following percentage composition
    C = 54.55%, H = 9.09%, O = 36.36%
    Determine the empirical formula of the compound. (3)
    ii) State Heisenberg's uncertainty principle. (2)

(OR)

b) i) Explain the Pauling method for the determination of ionic radius. (3)
    ii) How do you convert para hydrogen into ortho hydrogen. (2)

36. a) i) Derive the relation between enthalpy and internal energy. (3)

ii) Define Joule-Thomson effect. (2)

(OR)

b) Derive the relation between Kp and Kc. (5)

37. a) i) List the characteristics of Gibbs free energy. (3)

ii) Calculate the entropy change during the melting of one mole of ice into water at 0°C and 1 atm pressure Enthalpy of fusion of ice is 6008 J mol^{-1}. (2)

(OR)

b) i) What is entropy? Write its unit. (2)

ii) Deduce the Vant Hoff equation. (3)

38. a) i) Explain electromeric effect. (3)

ii) What are homologous series. (2)

(OR)

b) Differentiate electrophiles and nucleophiles. (5)

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11A022

H

FIRST MIDTERM TEST - 2024

Standard - XI

CHEMISTRY

Time: 1.30 hrs Marks:35

PART - I

Choose the correct answer. 5x1=5

1. 7.5 g of gas occupies a volume of 5.6 litres at 0°c and 1 atm pressure. The gas is °c.
   a) NO b) N_2O c) CO d) CO_2
2. The total number of Orbitals associated witht the Principal quantum number n=3 is
   a) 9 b) 8 c) 5 d) 7
3. Maximum deviation from ideal gas is expected from
   a) $CH_{4(g)}$ b) $NH_{3(g)}$ c) $H_{2(g)}$ d) $N_{2(g)}$
4. In a irreversible process, the chang in entopy of the universe is _____
   a) >0 b) ≥0 c) <0 d) =0
5. The isomer of ethanol is
   a) CH_3CHO b) CH_3OCH_3 c) CH_3COCH_3 d) C_2H_5OH

PART - II

Answer any three of the following. 3x2=6

6. Define equivalent mass.
7. Heisenberg uncertainly principle.
8. Graham's law of Diffusion.
9. What is asymmetric (or) chiral carbon (C*).
10. Identify the functional group in the following compounds.
    a) oxalic acid b) acetaldehyde c) di methyl ether d) methylamine

PART - III

Answer any three of the following. 3x3=9

11. Distinguish between oxidation and reduction.
12. Write the electronic configuration of Cr, Cu.
13. What is meant by inversion temperature?
14. What are the applications of Bomb Calorimeter?
15. Describe the classification of organic compounds based on their structure.

PART - IV

Answer all questions. 3x5=15

16. a) A compound gave C=54.55% H=9.09% O=36.66% Determine the emprical formula of the compound.

(OR)

b) Explain Quantum numbers.

17. a) Derive the values of critical constants in terms of Vander Waals constants.

(OR)

b) i) What is meant by internal energy.

ii) Define - Kelvin - Planck Statement.

8. a) Explain (i) Position isomorism (ii) Tautomerism of organic compounds.

(OR)

b) (i) Define Sublimation.

(ii) Write the IUPAC name of the following

1) $C_2H_5 O C_2H_5$ 2) $CH_3 COOH$ 3) $CH_3 CH = CH - CH_3$

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