No. of printed pages=14

CLASS-XII

POST MID TERM EXAM (2025-26)

CHEMISTRY (043)

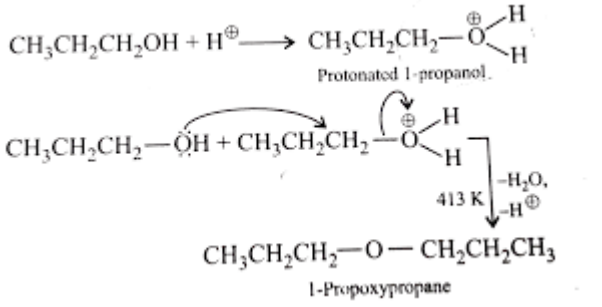
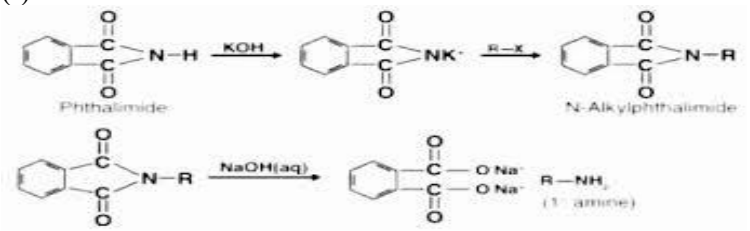
SET A1/ A2 (SOLUTIONS)

	SECTION A *The following questions are multiple-choice questions with one correct answer. Each question carries 1 mark. There is no internal choice in this section.*	
1.	Phenol is less acidic than _____. (i) ethanol (ii) **o-nitrophenol**(iii) o-methylphenol (iv) o-methoxyphenol The decreasing order of acidity is: SET A2 (i) **o-Nitrophenol > m-Nitrophenol > p-Nitrophenol** (ii) p-Nitrophenol > m-Nitrophenol > o-Nitrophenol (iii) m-Nitrophenol > p-Nitrophenol > o-Nitrophenol (iv) All have same acidity	1
2.	In the electrolysis of dilute H_2SO_4 using inert platinum electrodes, the product at anode is: (i) SO_2 gas (ii)H_2S gas **(iii)O_2 gas** (iv)H_2 gas Which of the following is **not** a factor in the corrosion of iron? SET A2 (i) Presence of water and oxygen (ii) High conductivity of the medium (iii)Presence of inhibitors (which slow down corrosion) **(iv)Passive oxide layer on the metal**	1
3.	Which of the following is most reactive towards nucleophilic substitution reaction? (i) C_6H_5Cl (ii) CH_2=CHCl **(iii) $ClCH_2CH=CH_2$** (iv) CH_3CH=CHCl Which of the following compounds will give racemic mixture on nucleophilic substitution by OH^- ion? SET A2 (a)$CH_3CH(C_2H_5)Br$ (b) $CH_3C(C_2H_5)(Br)CH_3$ (c)$CH_3CH(C_2H_5)CH_2Br$ **(i) (a)** (ii) (a), (b), (c) (iii) (b), (c) (iv) (a), (c)	1

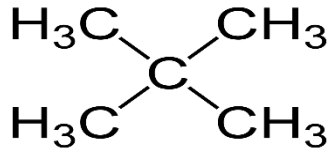
4.	Which of the following reagents converts a nitrile into an aldehyde? (i) $LiAlH_4$ **(ii) $SnCl_2$/HCl** (iii) H_2/Ni (iv) $NaBH_4$ Which of the following reagents converts a ketone directly into a hydrocarbon under suitable conditions? SET A2 (i) **Zn(Hg) + HCl** (ii) $NaBH_4$ (iii) PCC (iv) H_2, Pd	1
5.	Which of the following solutions will show maximum freezing point depression? (i) 0.1 M KCl (ii) 0.1 M $C_6H_{12}O_6$ (iii) 0.1 M $MgCl_2$ (iii) **0.1 M $NaNO_3$** Which of the following will have the highest boiling point elevation? (i) 0.1 M NaCl **(ii) 0.1 M $CaCl_2$** (iii)0.1 M Glucose (iii) 0.1 M KNO_3 SET A2	1
6.	Chloromethane on treatment with excess of ammonia yields mainly: (i)N,N-Dimethylmethanamine (ii)N-Methylmethanamine (iii) **Methanamine** (iv)Mixture containing all these in equal proportions. Which of the following compounds will be hydrolysed most rapidly under similar reaction conditions? SET A2 (i) 1-Chloropropane (ii)1-Chlorobutane **(iii)2-Chloro-2-methylpropene** (iv) 2-Chlorobutane	1
7.	Arrange in increasing order of acidity: CH_3COOH, $ClCH_2COOH$, FCH_2COOH. **(i)$CH_3COOH < ClCH_2COOH < FCH_2COOH$** (ii) $FCH_2COOH < ClCH_2COOH < CH_3COOH$ (iii)$ClCH_2COOH < CH_3COOH < FCH_2COOH$ (iv) $CH_3COOH < FCH_2COOH < ClCH_2COOH$ The strongest acid among the following is: SET A2 **(i) Trichloroacetic acid** (ii) Formic acid (iii) Acetic acid (iv) Monochloroacetic acid	1
8.	ΔG^0 and E°_{cell} for a spontaneous reaction will respectively be (i) positive and positive (ii) positive and negative **(iii) negative and positive** (iv) negative and negative In the Kohlrausch relationship for strong electrolytes at low concentration: Which of the following equality holds true? SET A2 (i)$\Lambda_m = \Lambda_m^0$ as C –> $A^{1/2}$ (ii)**$\Lambda_m = \Lambda_m^0$ as C –> 0** (iii)$\Lambda_m = \Lambda_m^0$ as C → ∞ (iv) $\Lambda_m = \Lambda_m^0$ as C –> 1	1
9.	In electrophilic substitution of aniline, the $–NH_2$ group directs incoming groups to: (i)Meta-position **(ii) Ortho- and para-positions** (iii) Only para-position (iv) Only ortho-position	1

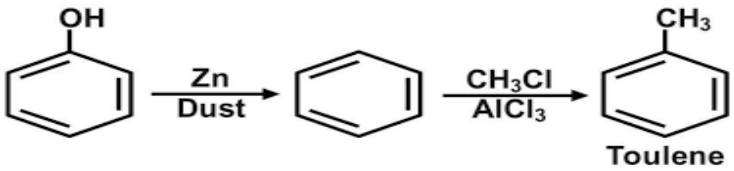
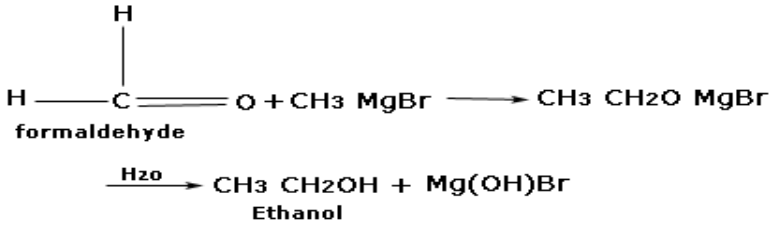
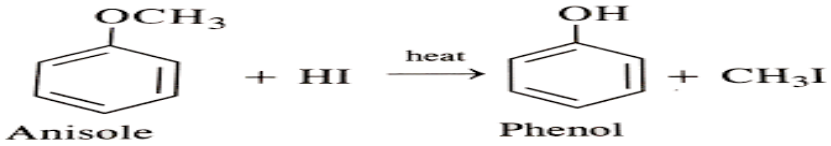
	Aliphatic amines are stronger bases than aromatic amines because: SET A2 (i) +I effect of alkyl group (ii) –I effect of aryl group (iii) Resonance in aniline **(iv) All of the above .**	
10.	70 gm solute is dissolved in 700 gm solvent to prepare a solution having density 1.5 g/ml. The ratio of its molality and molarity will be: (i) 0.77 (ii) 1.4 **(iii) 0.73** (iv)1.3 A student prepares 0.5 molal aqueous NaCl. If K_f = 1.86 K kg/ mol and i = 1.9, calculate ΔT_f. SET A2 (i) 0.93 K **(ii) 1.77 K** (iii) 1.86 K (iv) 2.00 K	1`
11.	Which of the following contains only β-D- glucose as its monosaccharide unit: (i) Sucrose **(ii) Cellulose** (iii) Starch (iv) Maltose The monomer units of cellulose are linked by: SET A2 (i) α-1,4-glycosidic bond **(ii) β-1,4-glycosidic bond** (iii) α-1,6-glycosidic bond (iv) β-1,6-glycosidic bond	1
12.	Phenol on oxidation with chromic acid gives: (i) **Quinone** (ii) Benzoquinone (iii) Benzaldehyde (iv) Catechol In the reaction of phenol with $CHCl_3$ and NaOH, the electrophile involved is: SET A2 (i) $–CHCl_2$ **(ii) $:CCl_2$** (iii) $:CH_2$ (iv) $–CH_2Cl$	1
	In the following Q.Nos.8 and 9 a statement of assertion followed by a statement of reason is given. Choose the correct answer out of the following choices. a. Both A and R are true and R is the correct explanation of A b. Both A and R are true but R is not the correct explanation of A. c. A is true but R is false. d. A is false but R is true.	
13.	**Assertion (A):** $[Mn(CN)_6]^{3-}$ has a magnetic moment of two unpaired electrons while $[MnCl_6]^{3-}$ has a paramagnetic moment of four unpaired electrons. **Reason (R):** $[Mn(CN)_6]^{3-}$ is inner orbital complexes involving d^2sp^3 hybridisation, on the other hand, $[MnCl_6]^{3-}$ is outer orbital complexes involving sp^3d^2 hybridisation. 13. (a) Both A and R are true and R is the correct explanation of A	1
14.	**Assertion (A):** Glucose does not form the hydrogensulphite addition product with $NaHSO_3$. **Reason (R):** Glucose exists in a six-membered cyclic structure called pyranose structure. 14. (b) Both A and R are true, but R is not the correct explanation of A.	1
15.	**Assertion (A):** The half- life for a zero order reaction is independent of the initial concentration of the reactant. **Reason (R):** For a zero-order reaction, Rate = k (d)A is false but R is true.	1

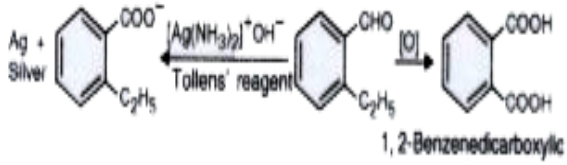
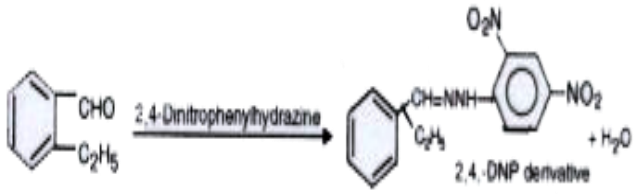
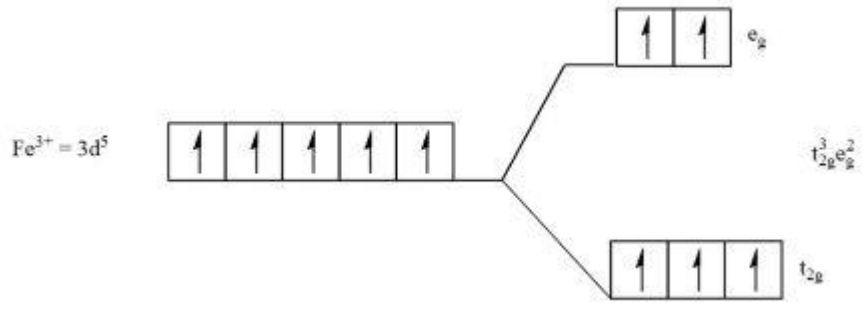
16.	**Assertion (A):** Secondary aliphatic amines react with nitrous acid to form aliphatic diazonium salts which being unstable, liberate nitrogen gas quantitatively. **Reason(R):** Nitrogen gas evolved on reaction with nitrous acid can be used for the estimation of proteins and amino acids (d)A is false but R is true.	1
	SECTION B *This section contains 4 questions with internal choice in one question. The following questions are very short answer type and carry 2 marks each.*	
17.	Using valence bond theory, explain the following in relation to the complex **[**$NiCl_4]^{2-}$: (i) IUPAC name (ii) Type of hybridisation. (iii) Magnetic behaviour. (iv) The shape of the complex. (i) Tetrachloridonickelate(II) (ii) sp^3 (iii) Paramagnetic (iv) Tetrahedral	½ x 4
18.	(i)A binary liquid mixture A–B shows total vapour pressure higher than expected from ideal behaviour at 298 K. State whether the mixture shows positive or negative deviation from Raoult's law and explain the molecular reason. (ii) For determination of molar mass of polymers and proteins, which colligative property is preferred and why? OR (i) Why oxygen cylinders are essential for mountain climbers? (ii) Explain why ethanol–water form a **minimum-boiling azeotrope**, whereas nitric acid–water form a **maximum-boiling azeotrope.** **(i)Positive deviation.** Means A–B interactions are weaker than A–A and B–B; vapor pressure increases because more molecules escape into vapour state. (ii) Osmotic Pressure. Even in dilute solutions, the osmotic pressure values are high and can be measured accurately. It is measured at room temperature.	1+1

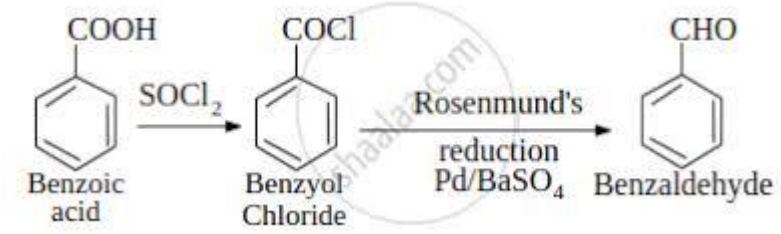
	OR (i)Henry's law: solubility of a gas in a liquid is **directly proportional to pressure** of that gas. At high altitudes, **atmospheric pressure and oxygen solubility in blood decrease**, reducing oxygen supply to tissues. (ii) **Ethanol–water** show **positive deviation** from Raoult's law (weaker solute–solvent interactions than pure liquids) → higher vapour pressure → **minimum-boiling azeotrope. HNO_3 - water** show **negative deviation** (strong hydrogen bonding) → lower vapour pressure → **maximum-boiling azeotrope.**	
19.	How is 1-Propoxypropane synthesized from propan-1-ol? Write mechanism of this reaction.  	2
20.	(i) Illustrate Gabriel phthalimide synthesis. (ii) Arrange the following in increasing order of basic strength in aqueous solution: **(a) NH_3 (b) CH_3NH_2 (c) $(CH_3)_2NH$ (d) $(CH_3)_3N$** (i)  (ii)In aqueous solution the observed order (for small alkyl groups) is: $(CH_3)_2NH > CH_3NH_2 > (CH_3)_3N > NH_3$.	1+1
21.	(i)Which of the following lanthanoids show +2 oxidation state besides the characteristic oxidation state +3 of lanthanoids? (a) Ce (b) Eu (c) Yb (d) Tb (ii) Although Zr belongs to 4d and Hf belongs to 5d transition series, but it is quite difficult to separate them. Why? (i)Eu & Yb (ii) Zr, a member of 4d series and Hf, a member of 5d series, belong to same group. They are chemically so similar that their separation is difficult. This is due to the fact that both have same size due to lanthanide contraction. The radii of these elements are 160 pm (Zr) and 159 pm (Hf).	1+1

	SECTION C *This section contains 3 questions with internal choice in one question. The following questions are short answer type and carry 3 marks each.*	
22.	What will be the vapour pressure of a 1 molal aqueous solution of $MgCl_2$, assuming dissociation of $MgCl_2$ to be 70 mole percent? (Vapor pressure of pure water at 25^0C is 23.8 mmHg) $P_A{}^o$ = 23.8 mm of Hg m = 1molal i.e.1mol of solute in1000g of water n_B =1 mol n_A = 1000/18= 55.5mol $MgCl_2$ → Mg^{2+} + $2Cl^-$ 1 0 0 1-0.7 0.7 1.4 $\alpha = (i-1)/(n-1)$ n=3 i = 0.7 (2) + 1 = 1.4 + 1 = 2.4 $P_A{}^o - Ps/ P_A{}^o = i\ \{n_B / n_A + n_B\}$ $(23.8 - Ps)/ 23.8 = 2.4\ \{1 / 56.5\}$ $23.8\ \{1- 2.4/ 56.5\}$ =Ps = 22.9mm of Hg	3
23.	(i)The decomposition of N_2O_5 in CCl_4 follows first-order kinetics: $$2\ N_2O_5 \rightarrow 4\ NO_2 + O_2$$ When concentration of N_2O_5 changes from 0.5 mol/L to 0.1 mol/L in 966s, calculate the rate constant $k$and the half-life period of the reaction. [Given: log 5=0.6990] (ii)Give one example of pseudo first order reaction. (i) 2.303 x log $\{[A]_0 /[A]\}$= kt . Substituting the values we get, k=[0.699 x2.303]/966 =0.0016/s = 1.66x 10^{-3}/s Half-life $t_{1/2}$= 0.693/k = 0.693/0.0016= 433s Correct formula – ½+1/2 **mark** Correct calculation– **½ +1/2 mark** (ii)Hydrolysis of an ester /Inversion of cane sugar	2+1
24.	Calculate the cell emf and ΔG^0 for the cell at 25 °C Mg (s)/ Mg^{2+}(0.001M)// Cu^{2+} (0.0001M)/Cu(s) Given: $E^0_{Mg2+/Mg}$ = -2.37V, $E^0_{Cu2+/Cu}$ = +0.34V, Use F=96500C/mol Ans. E^0cell= (0.34V) −(−2.37) =+2.71 V. (1/2) Q= $[Mg^{2+}]/ [Cu^{2+}]$= 10 (1/2) E_{cell} = 2.71-(0.059/2) log 10 = 2.70V (1mk)	3

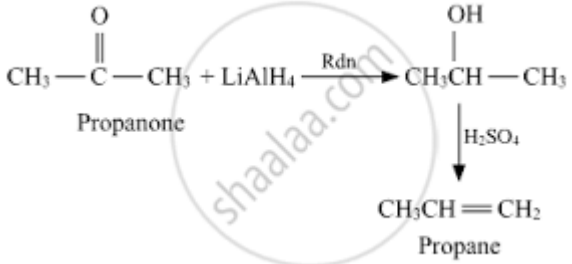
	$\Delta G^0 = -nFE^0 = -521100J/mol$ =-521.100kJ/mol (1mk)	
25.	(i) How can methyl bromide be preferentially converted to methyl cyanide and methyl isocyanide? (ii) A hydrocarbon of molecular mass 72 g mol^{-1} gives a single monochloro derivative and two dichloro derivatives on photo chlorination. Give the structure of the hydrocarbon. (iii)What are freons? Also give one use of freon. (i) By using KCN and AgCN with methyl bromide respectively. (ii)C_5H_{12}, pentane has molecular mass 72 g mol^{-1} i.e., isomer of pentane which yields single monochloro derivative should have all the 12 hydrogens equivalents. NEOPENTANE  (iii)The chlorofluoro derivatives of methane and ethane. eg. Freon-12 Used in air conditioning and in domestic refrigerators for cooling purposes.	1+1+1
26.	(i) Explain why the –OH group in phenol cannot be replaced by Cl^- easily, whereas in alcohols it can. (ii)In Kolbes' reaction, instead of phenol, phenoxide ion is treated with carbon dioxide. Why? (iii)Give a chemical test to distinguish between propan-2-ol and benzyl alcohol. OR How do you convert: i.Phenol to toluene ii.Formaldehyde to ethanol iii.Anisole to phenol **Answer:** In phenol, C–O bond has partial double bond character due to resonance → bond stronger, less reactive to nucleophilic substitution. In alcohols, C–O bond is purely single → easily replaced by halide via SN1/SN2 mechanism. (ii)In Kolbe's reaction, phenoxide ion is used instead of phenol because it is a much stronger nucleophile and the benzene ring is more	1+1+1

	activated for electrophilic substitution. This increased reactivity is due to the negative charge on the oxygen atom, which allows it to donate more electron density to the benzene ring, making it more susceptible to attack by the weak electrophile, carbon dioxide. (iii) We can distinguish between propan-2-ol and benzyl alcohol using the iodoform test. Propan-2-ol will give a positive result by forming a yellow precipitate of iodoform, while benzyl alcohol will not react and show no precipitate OR i.  ii.  iii.  	
27.	A reaction has an activation energy of 60 kJ mol^{-1}.By what factor will the rate of the reaction increase if the temperature rises from 300 K to 310 K? [Use; R= 8.314 J/mol K , $e^{0.775}$=2.17 **Answer:** Using Arrhenius equation ratio form; ln k2/k1 =Ea/R[1/T_1-1/T_2] =60000/8.314[1/300-1/310] = 0.775	3

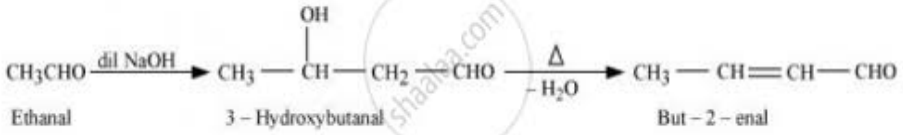
	k2/k1= $e^{0.775}$=2.17 ,Hence, **rate increases by a factor of ~2.2**. With every 10^0 rise the rate doubles. Correct formula – **1 mark,** Correct substitution – **1 mark ,** Correct factor/interpretation – **1 mark**	
28.	(i)An organic compound with molecular formula $C_9H_{10}O$ forms, 2, 4-DNP derivatives, reduces Tollen's reagent and undergoes Cannizzaro reaction. On vigorous oxidation, it gives 1,2- benzene dicarboxylic acid. Identify the compound. Write equation for the reactions involved. (ii) Give a simple test to distinguish between formic acid and acetic acid. Ans. (i) 2-Ethylbenzaldehyde  1, 2-Benzenedicarboxylic acid  2,4-DNP derivative (ii)Formic acid reduces Tollen's reagent to metallic silver but acetic acid does not.	2+1
	SECTION D	
29.	**Read the given passage and answer the questions that follow:** (i)A metal ion M^{n+} of the first transition series having d^5 configuration combines with three bidentate ligands. Assuming $\Delta_0 < P$: Draw the crystal field energy level diagram for the 3d orbital of this complex. Also name the type of isomerism exhibited by this complex. (ii)Which of the following is more stable complex and why? **$[Co(NH_3)_6]^{3+}$** and **$[Co(en)_6]^{3+}$** (iii)Give the use of EDTA in medicinal chemistry. What is its denticity? (i)optical Isomerim  	2+1+1

	(ii)**[Co(en)$_6$]$^{3+}$**, because en is a chelating ligand. (iii)Treatment of Lead poisoning. (1/2) six (1/2)	
30	**Read the given passage and answer the questions that follow:** i.Using the graph, explain why , a) Λm for KCl decreases slightly with an increase in √c. b) Λm for Acetic acid increases rapidly with dilution. ii.If Λm^0 for HCl = 426 S cm²/ mol and Λm at 0.01 M = 390 S cm²/ mol, calculate α and comment on its significance. iii. Suggest how Λm^0 value for Acetic acid can be determined. State the law used. i.a) Due to increased **ionic interactions** and **electrophoretic effect** at higher concentrations, ions move less freely → Λm decreases. b) For weak electrolytes, degree of dissociation (α) increases on dilution → more ions in solution → Λm rises sharply. ii. α = Λm / Λm^0 = 390 / 426 = 0.915. → 91.5% dissociation; nearly complete at 0.01 M → confirms HCl is a **strong electrolyte**. iii. Use Kohlrausch's law: Statement Λm^0 (CH_3COOH) = Λm^0(CH_3COONa) + Λm^0 (HCl) − Λm^0 (NaCl). Measure Λm^0 for each strong electrolyte experimentally and combine.	1+1+2
	SECTION E *The following questions are long answer type and carry 5 marks each.*	
31.	i.Carry out the following conversions in not more than two steps: a.Benzoic acid to benzaldehyde b. Propanone to propene. c.Ethanal to but-2-enal ii.Illustrate the HVZ reaction. iii.Write a test to differentiate between pentan-2-one and pentan -3-one. OR i. Account for the following: a. Carboxylic acids contain carbonyl group but do not show the nucleophilic addition reaction like aldehydes or ketones. b.The boiling points of aldehydes and ketones are lower than those of corresponding carboxylic acids c. Aldehydes without α-hydrogen undergo Cannizzaro reaction while those with α-hydrogen generally do not. ii. Write the structures of the following compounds: a.α-methoxy propionaldehyde b. 4-Nitropropiophenone i**. a.**  	3+2 3+2

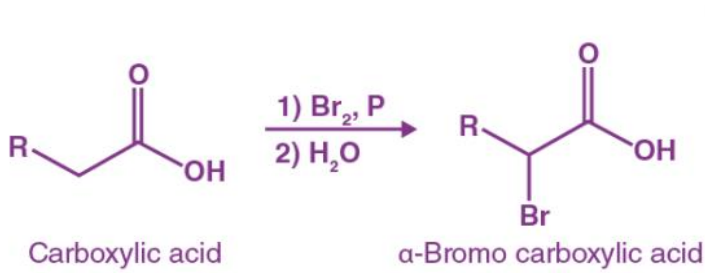
b.



c.



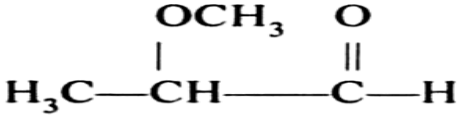
ii.

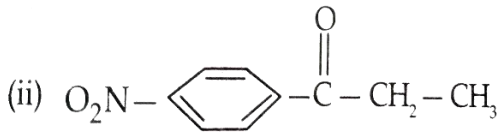


iii.Pentan-2-one shows positive iodoform test.

OR

i. a.Carboxylic acids do not undergo nucleophilic addition reactions like aldehydes or ketones because resonance delocalizes the positive charge on the carbonyl carbon, making it less electrophilic
b.Aldehydes/ketones cannot form strong intermolecular H-bonding between molecules (only weak dipole–dipole), whereas carboxylic acids form strong dimeric H-bonds — hence acids have much higher b.p
c. Aldehydes without an α-hydrogen undergo the Cannizzaro reaction because they lack acidic α-hydrogens needed for alternative reactions like aldol condensation. In the Cannizzaro reaction, a strong base causes a disproportionation where one molecule of the aldehyde is oxidized to a carboxylate salt, and another is reduced to an alcohol. Aldehydes with α-hydrogens, like acetaldehyde, do not undergo this reaction and instead typically undergo aldol condensation in the presence of a base.
ii.a.



	(ii)  P—Nitropropiophenone b.	
32.	(i)When a chromite ore (A) is fused with sodium carbonate in free excess of air and the product is dissolved in water, a yellow solution of compound (B) is obtained. After treatment of this yellow solution with sulpi.huric acid, compound (C) can be crystallized from the solution. When compound (C) is treated with KCl, orange crystals of compound (D) crystallise out. Identify A to D and explain the reactions. (ii) Account for the following: a. The enthalpies of atomization of transition metals are quite high. b. Transition metals act as catalysts. **OR** Following are the transition metal ions of 3d series : **Ti^{4+}, V^{2+}, Mn^{3+}, Cr^{3+}** (Atomic numbers: Ti = 22, V = 23, Mn = 25, Cr = 24) Answer the following questions: a.Which ion is most stable in an aqueous solution and why? b.Which ion is a strong oxidizing agent and why? c.Which ion is colourless and why? (ii) Complete the following equations: a.$2MnO_4^- + 16H^+ + 5S^{2-}$ → b.$KMnO_4$ + heat → Answer: (i)The compounds A, B, C and D are given as under: $A = FeCr_2O_4$ $B = Na_2CrO_4$ $C = Na_2Cr_2O_7.2H_2O$ $D = K_2Cr_2O_7$ The reactions are explained as under: $4FeCr_2O_4 + 8NaCO_3 + 7O_2 \longrightarrow 8Na_2CrO_4 + 2Fe_2O_3 + 8CO_2$ (A) (B) $2NaCrO_4 + 2H^+ \longrightarrow Na_2Cr_2O_7 + 2Na^+ + H_2O$ $Na_2Cr_2O_7 + 2KCl \longrightarrow K_2Cr_2O_7 + 2NaCl$ (C) (D) (ii)a. The enthalpies of atomization for transition metals are high because they have a large number of unpaired electrons, which leads to strong metallic bonding between atoms. This strong interatomic attraction requires a high amount of energy to break the bonds and convert the metal into a gaseous state.	3+2

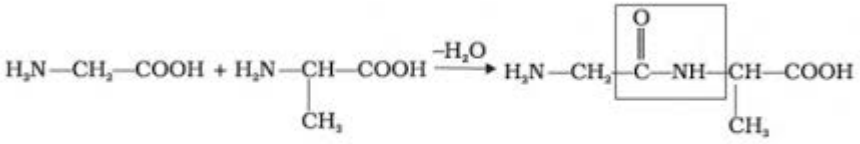
	b. Transition metals are excellent catalysts because they can form intermediate complexes, exhibit multiple oxidation states, and have a large surface area which lowers the activation energy of a reaction. These properties allow them to facilitate a reaction by providing an alternative pathway where reactants can more easily bond and react. OR (i) a. Cr^{3+} is most stable in aqueous solution. according to crystal field Theory it has half filled t_{2g}^{3} b. Mn^{3+} is a strong oxidising because it can easily be converted to Mn^{2+} having d^5 configuration which is extra stable c. Ti^{4+} is colourless because it has $3d^0$ configuration and therefore no unpaired electrons. (ii) (a) $2MnO_4^- + 16H^+ + 5s^{2-} \rightarrow 2Mn^{2+} + 5s + 8H_2O$ (b) $2KMnO_4 \xrightarrow{\Delta} K_2MnO_4 + MnO_2 + O_2$	
33.	Answer the following questions: **i**.Under what conditions glucose is converted to gluconic and saccharic acid? ii. Which sugar in called invert sugar? Why is it called so? iii. Which vitamin must be supplied regularly in diet and why? iv. Identify and give any one point of difference between the protein present in insulin and protein present in muscle. OR Answer the following questions: i. Structures of glycine and alanine are given below. Show the peptide linkage in glycylalanine. **NH_2CH_2COOH (Glycine)** and **$NH_2CH(CH_3)COOH$ (alanine)** **ii.** Coagulation of egg white on boiling is an example of denaturation of protein. Explain it in terms of structural changes. iii. Ruth suffers from a disease that results in increased blood clotting time. The doctor's prescription mentioned that Ruth is suffering from deficiency of some vitamin in her diet. Help the doctor identify the vitamin and suggest any one food source to help her recover faster. iv.What is the difference between a nucleoside and nucleotide? v.What are essential amino acids ? Give one example. **Solution** **i.** Glucose is converted to gluconic acid by Br2 water and to saccharic acid by conc. HNO_3. ii. Invert sugar is a mixture of glucose and fructose created from the hydrolysis of sucrose, and it's called this because its optical rotation inverts (or changes) from clockwise (dextrorotatory) to counterclockwise (laevorotatory). iii. Vitamin C is one vitamin that must be supplied regularly in the diet because it is water-soluble, and the body cannot store it. iv.Globular and fibrous respectively, (1) Any one point of difference. (1)	1+1+1+2 1X5

Ans.

Globular proteins	Fibrous Proteins
(*i*) They form α-helix structure.	(*i*) They have β-pleated structure.
(*ii*) They are soluble in water.	(*ii*) They are insoluble in water.
(*iii*) They are cross linked condensation polymers of acidic and basic amino accids.	(*iii*) They are linear condensation products.
(*iv*) They are folded to give rise to three dimensional spherical shapes.	(*iv*) The long linear protein chains form tree like structure.
Examples: Albumin, enzymes, hormones.	**Examples:** Fibroin, collagen, myosin etc.

OR

i.

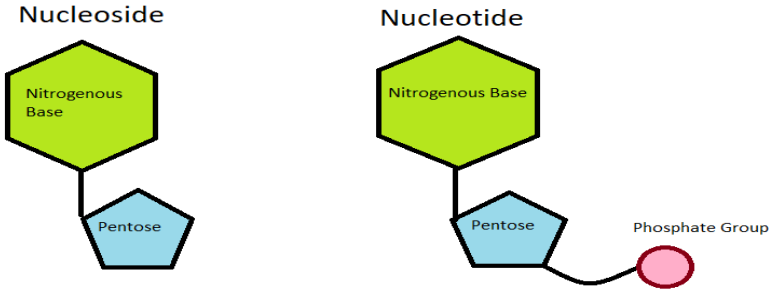


(Glycine) (Alanine) (Glycylalanine)

ii. When an egg is boiled, the soluble globular protein, albumin present in it is converted into insoluble fibrous protein. During this denaturation (i) biological activity is lost and (ii) secondary and tertiary structures of albumin protein are destroyed while the primary structure (representing the sequence of α-amino acids) remains intact.

iii. Vitamin K & Green Leafy vegetables

iv.



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v. Essential amino acids are the nine amino acids that the human body cannot produce and must be obtained from food, such as leucine or lysine