



Indian School Al Wadi Al Kabir

Assessment – I (2025-2026)

Class: XII

Subject: CHEMISTRY (043)

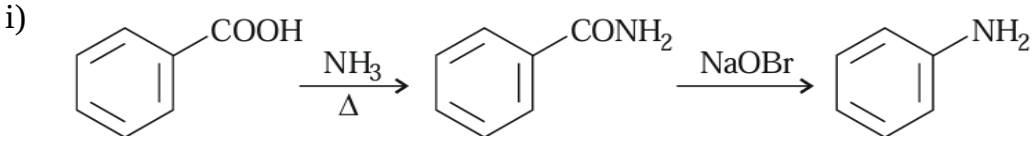
Max. marks: 70

Date: 21/09/2025

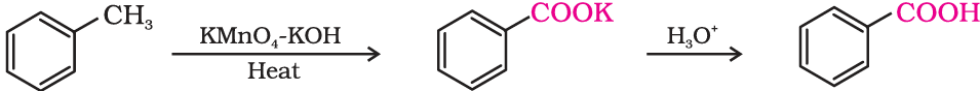
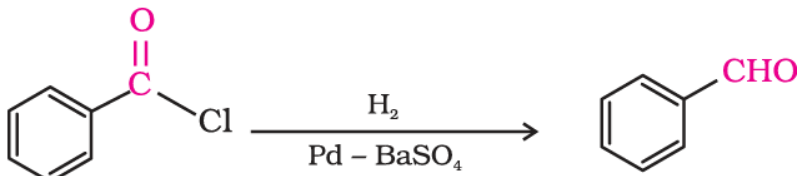
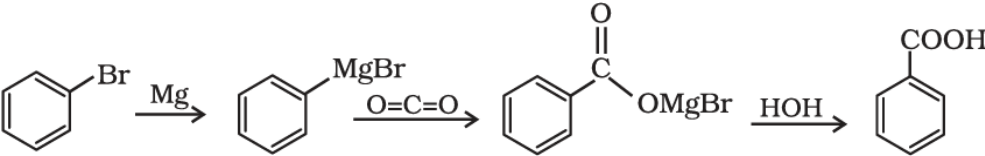
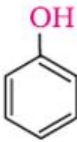
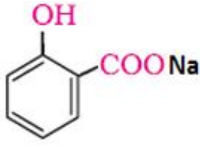
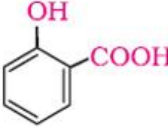
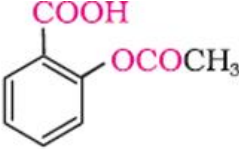
Set - I

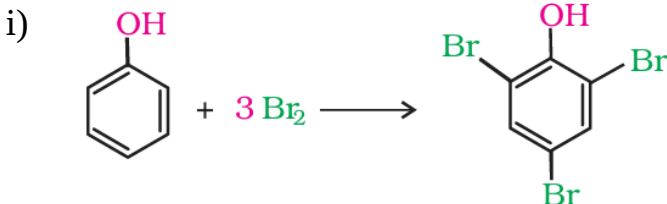
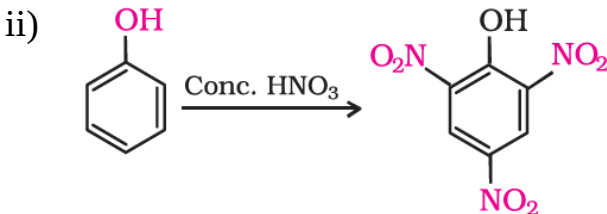
Time: 3 Hours

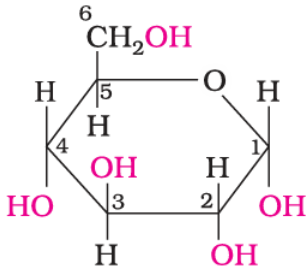
ANSWER KEY

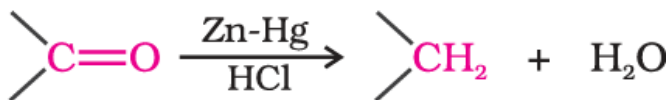
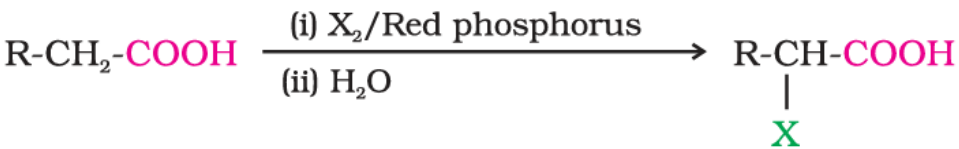
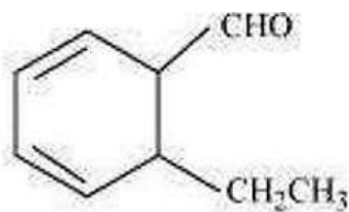
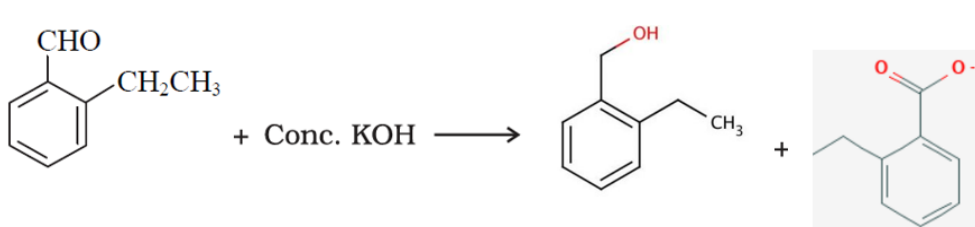
1.	(A) Maltose	1
2.	(D) Benzaldehyde	1
3.	(C) Tertiary alcohol	1
4.	(C) 2-Ethoxy-1,1-dimethylcyclohexane	1
5.	(D) Proteins	1
6.	(A) Methanal	1
7.	(B) Primary aliphatic amines	1
8.	(D) Ethanol	1
9.	(B) Vinyl halide	1
10.	(D) 2-Bromo-2-methylpropane	1
11.	(A) Primary amine	1
12.	(C) $\text{CH}_3\text{OCH}_3 < \text{CH}_3\text{CHO} < \text{CH}_3\text{CH}_2\text{OH} < \text{CH}_3\text{COOH}$	1
13.	(C) A is true but R is false.	1
14.	(D) A is false but R is true.	1
15.	(D) A is false but R is true.	1
16.	(A) Both A and R are true and R is the correct explanation of A	1
17.	a) i) 	1

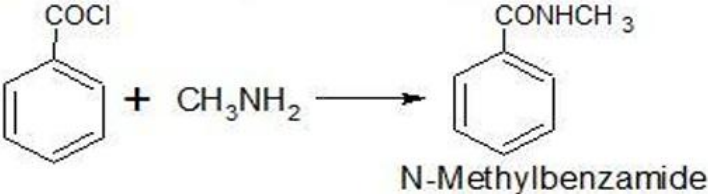
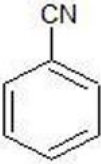
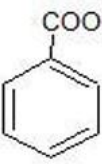
	ii) OR a) Aniline is a Lewis base and it reacts with AlCl_3 to form a salt / N of aniline acquires positive charge with AlCl_3 and hence is a deactivating group. b) $(\text{CH}_3)_3\text{N} < \text{CH}_3\text{NH}_2 < \text{NH}_3 < \text{C}_6\text{H}_5\text{NH}_2$	1 1 1
18.	a) b)	1 1
19.	(i) $\text{CH}_3\text{-CH}_2\text{-}\ddot{\text{O}}\text{-H} + \text{H}^+ \longrightarrow \text{CH}_3\text{-CH}_2\text{-}\overset{\text{H}}{\underset{\cdot\cdot}{\text{O}}}\text{-H}^+$ (ii) $\text{CH}_3\text{CH}_2\text{-}\ddot{\text{O}}\text{:} + \text{CH}_3\text{-CH}_2\text{-}\overset{+}{\text{O}}\text{(H)}_2 \longrightarrow \text{CH}_3\text{CH}_2\text{-}\overset{+}{\underset{\text{H}}{\text{O}}}\text{-CH}_2\text{CH}_3 + \text{H}_2\text{O}$ (iii) $\text{CH}_3\text{CH}_2\text{-}\overset{+}{\underset{\text{H}}{\text{O}}}\text{-CH}_2\text{CH}_3 \longrightarrow \text{CH}_3\text{CH}_2\text{-O-CH}_2\text{CH}_3 + \text{H}^+$	2
20.	a) Hydrolysis of sucrose gives dextrorotatory glucose and laevorotatory fructose. But the laevorotation of fructose is more than the dextrorotation of glucose. Hence, the mixture is laevorotatory. b) Vitamin B and C	1 1

21.	a) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2 - \text{Cl} \xrightarrow[\text{acetone}]{\text{NaI}} \text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2 - \text{I}$ b) $\text{CH}_3\text{CH}_2\text{CH} = \text{CH}_2 \xrightarrow[\text{peroxide}]{\text{HBr}} \text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2 - \text{Br}$ $\xrightarrow[\text{acetone}]{\text{NaI}} \text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2 - \text{I}$	1 1
22.	a)  b)  c) $\text{CH}_3\text{CH}_2\text{OH} \xrightarrow{\text{CrO}_3} 2 \text{CH}_3\text{-CHO} \xrightleftharpoons[\text{Ethanal}]{\text{dil. NaOH}} \text{CH}_3\text{-CH(OH)-CH}_2\text{-CHO}$ d)  <i>(Any three)</i>	1 1 1
23.	a) $(\text{CH}_3)_3\text{CCHO}$ b) $\text{CH}_3\text{CH}_2\text{CH}(\text{CH}_3)\text{CHO}$ c) $\text{CH}_3\text{COCH}_2\text{CH}_2\text{CH}_3$ or $\text{CH}_3\text{COCH}(\text{CH}_3)_2$	1 1 1
24.	A=  , B=  , C=  , D= 	1 ½ ½ 1
25.	a) Nucleoside: Base + Sugar, Nucleotide: Base + Sugar + Phosphate b) Adenine (A), Guanine (G), Cytosine (C) and Thymine (T) c) Messenger RNA (m-RNA), ribosomal RNA (r-RNA) and transfer RNA (t-RNA).	1 1 1

26.	a) i) p-nitroaniline < Aniline < p-toluidine ii) C ₆ H ₅ NH ₂ , (C ₂ H ₅) ₂ NH, C ₂ H ₅ NH ₂ b) C–Cl bond is not cleaved easily by NH ₃ due to partial double bond character of C – Cl bond.	1 1 1						
27.	a) β-D-galactose and β-D-glucose b) <table border="1"><thead><tr><th>Amylose</th><th>Amylopectin</th></tr></thead><tbody><tr><td>Soluble in water</td><td>Insoluble in water</td></tr><tr><td>Linear long chain polymer</td><td>Branched chain polymer</td></tr></tbody></table>	Amylose	Amylopectin	Soluble in water	Insoluble in water	Linear long chain polymer	Branched chain polymer	1 2
Amylose	Amylopectin							
Soluble in water	Insoluble in water							
Linear long chain polymer	Branched chain polymer							
28.	a) Phenyl magnesium bromide is formed. b) Benzyl alcohol is formed. c) 2,4,6–Trinitrophenol / Picric acid is formed. (OR, write equations)	1 1 1						
29.	a) i) ii) b) o-Nitrophenol is steam volatile due to intramolecular hydrogen bonding while p-nitrophenol is less volatile due to intermolecular hydrogen bonding which causes the association of molecules. c) (B) Kolbe's reaction OR c) (B) Benzoquinone	1 1 1 1						
30.	a) i) Retention of configuration. ii) Inversion of configuration. b) A mixture containing two enantiomers in equal proportions. c) 2-Bromo-2-methylpropane	1 1 1 1						

31.	a) Amino acids contain both acid (-COOH) and basic (-NH ₂) group and can react with both acids and bases.	1
	b) Amino acids which are not synthesized in our body and must be supplied through diet.	1
	c) Acidic amino acids contain more number of carboxyl groups than amino groups. Basic amino acids contain more number of amino groups than carboxyl groups.	1
	d) Peptide linkage	1
	e) Glycine	1
	OR	
	a) i. $ \begin{array}{c} \text{CHO} \\ \\ (\text{CHOH})_4 \\ \\ \text{CH}_2\text{OH} \end{array} \xrightarrow{\text{HCN}} \begin{array}{c} \text{CH} \begin{array}{l} \text{CN} \\ \text{OH} \end{array} \\ \\ (\text{CHOH})_4 \\ \\ \text{CH}_2\text{OH} \end{array} $ ii. $ \begin{array}{c} \text{CHO} \\ \\ (\text{CHOH})_4 \\ \\ \text{CH}_2\text{OH} \end{array} \xrightarrow{\text{Br}_2 \text{ water}} \begin{array}{c} \text{COOH} \\ \\ (\text{CHOH})_4 \\ \\ \text{CH}_2\text{OH} \end{array} $ iii. $ \begin{array}{c} \text{CHO} \\ \\ (\text{CHOH})_4 \\ \\ \text{CH}_2\text{OH} \end{array} \xrightarrow{\text{HI}, \Delta} \text{CH}_3\text{--CH}_2\text{--CH}_2\text{--CH}_2\text{--CH}_2\text{--CH}_3 $ (n-Hexane)	1
	b) 	2

32.	a) i) When heated with NaOH and I₂, Pentan-2-one forms yellow ppt of Iodoform whereas Pentan-3-one doesn't. ii) When heated with Fehling reagent, Methanal forms a reddish brown precipitate whereas Benzaldehyde doesn't. iii) When NaHCO₃ is added, Benzoic acid gives effervescence of CO₂ whereas Ethyl benzoate doesn't. b) i)  ii)  OR a) i)  2-Ethylbenzaldehyde ii)  b) O₂NCH₂COOH > ClCH₂COOH > CH₃COOH c) DIBAL - H	1 1 1 1 1 1 1 1 1 1 1 1
-----	---	---

33.	a) i) $A = C_6H_5CH_2NO_2$, $B = C_6H_5CH_2NH_2$, $C = C_6H_5CH_2NC$ ii) $A = CH_3OH$, $B = CH_3Cl$, $C = CH_3CN$ b) Hinsberg's Test: Methyl amine reacts with Hinsberg's reagent to give a product which is soluble in alkali. Dimethyl amine reacts with Hinsberg's reagent to give a product which is insoluble in alkali. Trimethylamine doesn't react with Hinsberg's reagent. OR a) i) Because aniline gets protonated to give anilinium ion which is deactivating in nature and is meta directing. b)  c) i) $A =$  $B =$  ii) $A = CH_3CONH_2$ $B = CH_3NH_2$	1 1 1 1 1 1 1 1 1 1
-----	--	---