

SET	A/B/C
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**INDIAN SCHOOL MUSCAT
HALF YEARLY EXAMINATION 2022
CHEMISTRY(043)**

CLASS: XII

Max.Marks:

17.	B	1
18.	B	1
19.	C	1
20.	A	1
21.	A	1
22.	Definition – Reverse Osmosis	1
23.	Freons-definition	1
24.	3-Chloromethyl-2-isopropylpentan-1-ol	1
25.	6-chloro-4-ethylhexan-3-one	1
26.	Due to base pairing principle, the sequence of bases in one strand fixes the sequence of bases in the other strand	1
27.	Henry's law Any two applications	1+1
28.	$W_b = 8 \times 74.5 / 2 \times 1.86 = 160.2 \text{ g}$	1+1
29.	a) Toluene is formed b) 1-methylcyclohexene	1+1
30.	a) Gattermann-Koch reaction (CO, HCl anhyd AlCl ₃) b) H ₂ O/H ⁺ followed by oxidation with PCC (or) anhydrous CrO ₃ (or) Cu/573 K (OR) Correct products a) Propanone - 1 b) Cyclohexanone and propanal - ½ ½	1+1
31.	a) Propan-1-ol, 4-methylphenol, phenol, 3-nitrophenol, 3, 5-dinitrophenol b) Chloroethane & sodium phenoxide	1 1
32.	Correct mechanism	2
33.	a) Glycosidic linkage b) Amylopectin	1+1
34.	i=1.0753 α=0.0753	1 1 1
35.	$X = \begin{array}{c} \text{Cl} \\ \\ \text{CH}_3 - \text{C} - \text{CH} - \text{CH}_3 \\ \quad \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$	1 ½ x 2

	$Z = \begin{array}{c} \text{CH}_3 - \text{CH} - \text{C} = \text{CH}_2 \\ \quad \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$ $Y = \begin{array}{c} \text{H}_3\text{C} - \overset{\cdot}{\underset{\cdot}{\text{C}}} = \text{C} - \text{CH}_3 \\ \quad \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$	1
	Reaction equations	
	OR	
	<p>(a) Benzyl chloride gives white ppt with aq KOH followed by HNO_3 and AgNO_3 which is soluble in NH_4OH</p> <p>(b) $\text{CH}_2 = \text{CH}-\text{CH}_2\text{Br}$, allyl carbocation is resonance stabilized.</p> <p>(c) Definition-ambident nucleophiles</p>	1x3
36.	<p>(a) I- is a better leaving group</p> <p>(b) Sulphuric acid oxidises HI formed to I_2</p> <p>(c) KCN is ionic And attack takes place through C but AgCN is covalent ,N donates electrons</p>	1x3
37.	<p>(a) O & p nitrophenol</p> <p>(b) Benzene</p> <p>(c) Salicylic acid is formed (with equations)</p>	1x3
38.	<p>(a) Oxidation –PCC</p> <p>(b) Friedelcrafts Acylation</p> <p>(c) Reaction of Acetophenone with ethyl magnesium bromide followed by hydrolysis</p>	1x3
39.	Equations of <ul style="list-style-type: none"> a) Rosenmund reduction reaction b) Stephen reaction c) Etard reaction 	1x3
40.	Equations OR One point of difference	1x3 $\frac{1}{2}+\frac{1}{2}$ $\frac{1}{2}+\frac{1}{2}$ $\frac{1}{2}+\frac{1}{2}$
41.	<p>a) $\text{Pmethanol} = 88.7 \times 0.49 = 43.46 \text{ mm of Hg}$ $\text{Pmethanol} = 44.5 \times 0.51 = 22.69$ $\text{P total} = 66.15 \text{ mm of Hg}$</p> <p>b) $760 / 4.27 \times 10^5 = 1.78 \times 10^{-3}$</p> <p>c) Definition –Cryoscopic constant</p>	3 1 1
	OR	
	<p>a) $C = 0.0812 \text{ mol L}^{-1}$</p>	3

	$\Delta T_f = 1.86 \times 0.0812 = 0.151^\circ\text{C}$ $T_f = 0 - 0.151 = -0.151^\circ\text{C}$ or 272.99K b) Non ideal with positive deviation, weakening of dipolar interactions and vapour pressure increases. c) Abnormal molar mass definition.	1 1
SETB		
1	d)(i)Rickets (ii)Scurvy e)Correct structure of β - D-Glucose	$\frac{1}{2}+\frac{1}{2}$ 1
7	B	1
13	$\text{C}_6\text{H}_5\text{C}(\text{Br})(\text{CH}_3)_2$	1
14	$\text{C}_6\text{H}_5\text{OH} + \text{CH}_3\text{CH}_2\text{I}$	$\frac{1}{2}+\frac{1}{2}$
26	Anomers –definition	1
32	Mechanism-hydration of ethene	2
33	Native protein ,Invert sugar	1+1
40	c)any one point of difference btn amylose &amylopectin	$\frac{1}{2}+\frac{1}{2}$
SET C		
1	d)(i)Nightblindness (ii) Cheilosis e)correct structure	$\frac{1}{2}+\frac{1}{2}$ 1
10	C	1
12	CGAACTC	1
14	$\text{C}_6\text{H}_4(\text{OH})\text{CH}_2\text{Cl}$	1
15	$(\text{CH}_3)_3\text{Cl} + \text{CH}_3\text{CH}_2\text{OH}$	$\frac{1}{2}+\frac{1}{2}$
30	b)hydroboration oxidation followed by oxidation using PCC	1
32	Mechanism	2
34	c) HCN-Cyanohydrin eqn	1
38	a) Picric acid is formed	1
41	c) Ebullioscopic constant definition	1