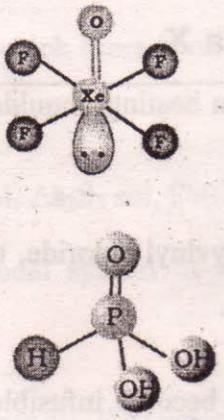
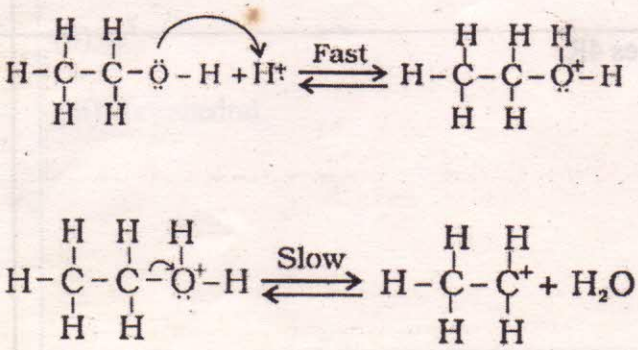
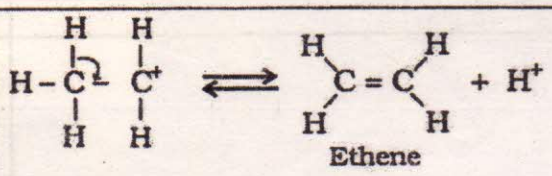
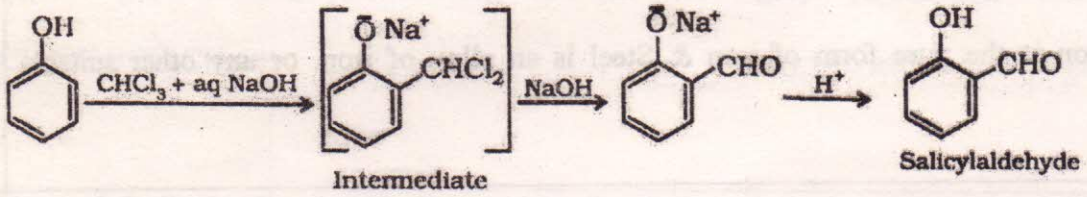
CHEMISTRY MARKING SCHEME
OUTSIDE DELHI -2013
SET -56/1

Qn	Answers	Marks
1	Chemisorption	1
2	Electrolytic Refining	1
3	Phosgene gas ($COCl_2$), Cholorpicrin (or tear gas) (CCl_2NO_2), Mustard gas ($ClCH_2CH_2SCH_2CH_2Cl$) (any two names or formulae)	½+½
4	3–Chloro–2,2–dimethylbutane / 2–Chloro–3,3–dimethylbutane	1
5	$CH_3CH_2CH_3 < CH_3CHO < CH_3CH_2OH$	1
6.	$CH_3CH_2–\underset{\displaystyle H}{\underset{\vert}{N}}–CH_3$	1
7.	Glucose & Fructose	1
8.	Homopolymer	1
9.	(i) In Schottky defect some ions are missing (or due to vacancies) from their normal lattice sites due to which density decreases. (ii) This is due to availability of unpaired or odd electron provided by P	1 1
10	For f.c.c unit cell $r = \frac{a}{2\sqrt{2}}$ $a = 2r \times \sqrt{2}$ $= 2 \times 125\ pm \times 1.414$ $= 353.5\ pm$	½ ½ 1
11	$\Delta G^o = -n FE^o$ cell $= -2 \times 96500\ C\ mol^{-1} \times 1.1\ V$ $= -212300\ J\ mol^{-1}$ or $-212.3\ k\ J\ mol^{-1}$	½ ½ 1

12	(a) order = 2 + ½ = 5/2 (b) $t_{½} = \frac{0.693}{k}$ $= \frac{0.693\ s}{5.5 \times 10^{-14}}$ $= 1.26 \times 10^{13}\ s$	½ ½ 1
13	(a) Froth Floatation Method (b) Wrought iron is the pure form of iron & Steel is an alloy of iron. or any other suitable difference.	1+1
14	(a) (b) 	1+1
15	The interhalogen compounds can be prepared by the direct combination or by the action of halogen on lower interhalogen compounds. General composition XX□n (where n = 1,3,5,7 & X□ is more electronegative)	1 1
16		½ ½

	 Ethene	1
17	(a) Reimer-Tiemann reaction  Intermediate Salicylaldehyde	
	(b) Williamson synthesis $R\text{-}X + R'\text{-}\ddot{O}\,Na \longrightarrow R\text{-}\ddot{O}\text{-}R' + Na\,X$	1+1
18	**Thermoplastics.** These polymers are easily softened on heating, moulded and then hardened on cooling.	½+½
	Examples: polythene, polypropylene, polystyrene, polyvinyl chloride, teflon, polyvinyl acetate, etc. (any one)	
	Thermosetting polymers These polymers on heating become infusible and form an insoluble hard mass thus, cannot be remoulded.	½+½
	Examples: Bakelite, urea-formaldelyde resins, etc. (any one)	
	OR	
18	The polymers which can be degraded by the micro organism	1
	Example: PHBV (or any other correct one example)	1
19	Given if rate at 293K is R thus at 313K rate becomes 4R $\text{Log}\frac{k_2}{k_1} = \frac{E_a}{2{\cdot}303R}\left[\frac{T_2 - T_1}{T_1 \times T_2}\right]$	1
	$\text{Log}\frac{4R}{R} = \frac{E_a}{2{\cdot}303 \times 8{\cdot}314}\left[\frac{313 - 293}{293 \times 313}\right]$	