

SECOND YEAR HIGHER SECONDARY EXAMINATION, JUNE 2017  
(Finalised Scheme of Valuation)

Subject: Part III Chemistry



Code No: 7016

Qn.No	Scoring Indicators	Split Score	Total Score
1 (a)	iii or They are isotropic	1	4
(b) i)	bcc - 2 ( $8 \times \frac{1}{8} + 1 = 2$ ) fcc - 4 ( $8 \times \frac{1}{8} + 6 \times \frac{1}{2} = 4$ )	1	
(ii)	Any one example for covalent solid	1	
		1	
2 (a)	ii or 0.5	1	4.
(b) i)	A - V.P curve of Solvent / solvent B - V.P curve of Solution / solution (Any one A or B)	1	
(ii)	Definition of B.P or V.P of solution is less than solvent or presence of non volatile solute or decrease in V.P or elevation of B.P.	2	
3 (a)	iv or $\text{CH}_3\text{COOH}$ .	1	4.
b i)	Definition of Kohlrausch's law or equation	1	
ii	$\lambda_m^\circ = \lambda_{\text{H}^+}^\circ + \lambda_{\text{CH}_3\text{COO}^-}^\circ = 340 \times 10^{-5} + 50.5 \times 10^{-5}$ Equation and Substitution (Equation or Substitution only - 1)	2	
	OR $\alpha = \frac{\lambda_m}{\lambda_m^\circ} = \frac{4.95 \times 10^{-5}}{390.5 \times 10^{-5}}$ (Equation or Substitution only - 1)	2.	

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Qn. No	Sub Qns	Answer Key / Value points	Score	Total
4	(i)	$K = A e^{-E_a/RT}$ or $\log K = \log A - \frac{E_a}{2.303RT}$	1	4
	(ii)	Definition of $E_a$ or graph Showing $E_a$	1	
	(iii)	$\log \frac{K_2}{K_1} = \frac{E_a}{2.303R} \left[ \frac{T_2 - T_1}{T_1 T_2} \right]$ — ① Substitution — ①	2	
5	(a)	iv or Tyndall effect.	1	3
	(b) i	Definition or graph of isotherms or explanation of terms in Freundlich Adsorption isotherms	2	
6.	(a)	iii or Malachite	1	3
	(b)	Explanation of Froth floatation Sulphide ore — ①	2	
7.	a)	iv or $H_2Te$	1	
	b) (i)	$P \rightarrow 2SO_2 + O_2 \xrightleftharpoons{V_2O_5} 2SO_3$ — ① $Q \rightarrow SO_3 + H_2SO_4 \rightarrow H_2S_2O_7$ — ① or $H_2S_2O_7 + H_2O \rightarrow 2H_2SO_4$ — ①	2	
	(ii)	Charring of Cane sugar or any one example (egs or explanations)	2	
	(iii)	One use of $H_2SO_4$ .	2.	

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Qn. No	Sub Qns	Answer Key / Value points	Score	Total
	(a)	iv or $SbH_3$	1	5
	b) (i)	One reason for high -ve $\Delta_{eg}H$ value. (Deps of $\Delta_{eg}H$ . —①).	2	
	(ii)	$  \begin{array}{c}  \rho-H \\    \\  Cl \\  // \quad    \\  O \quad O  \end{array}  $	2	
	(iii)	Formula or general formula of one interhalogen compound. (any one from 'a' and any two from 'b')	2	
8	a	Lanthanide Contraction	1	4
	b	$\mu = \sqrt{n(n+2)}$ (Sc <sup>3+</sup> — no unpaired e <sup>-</sup> —① Ti <sup>3+</sup> — one unpaired e <sup>-</sup> —①)	2	
	c	d-d transition or correct explanation	2	
9	a)	iii or $[Ni(CO)_4]$	1	4
	(b) (i)	$dsp^2$ hybridisation or No unpaired e <sup>-</sup> s.	2	
	(ii)	CN <sup>-</sup> or Cyanide ion	1	

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Qn. No	Sub Qns	Answer Key / Value points	Score	Total
10.	(a)	Explanation or equation of $S_N^2$ reaction or any two characteristics of $S_N^2$ reaction	2	4
	(b)	Statement of Saytzeff rule (Saytzeff rule name only - 1)	2 #	
11.	(a)	ii or $CH_3CH_2OH$	1	4
	(b) i	Picric acid or 2,4,6-trinitrophenol or formula	$1\frac{1}{2}$	
	ii	Salicyl aldehyde or 2-hydroxy benzaldehyde or formula	$1\frac{1}{2}$	
	iii	$C_6H_5-OH + CH_3I$ phenol          iodomethane (Any two from b.)	$1\frac{1}{2}$	
12.	(a)	i or Methylanal	1	5
	(b) (i)	Explanation or structure of $>CO$ group.	2	
	(ii)	Explanation or equation of Aldol Condensation	2	
	(a)	iv or Benzaldehyde	1	
	(b) (i)	Explanation or equation of Etard's reaction (Etard's reaction name only - 1)	2	

Qn No.	Sub Qns	Answer Key / Value Points	Score	Total
	(ii)	Equation or explanation of $\text{C}_6\text{H}_5\text{COOH} \xrightarrow{\text{NH}_3} \text{C}_6\text{H}_5\text{CONH}_2 + \text{H}_2\text{O}$	2	
	(c)	Explanation or equation of Cannizzaro's reaction (Any one from 'a' any two from 'b' or 'c')	2	
13	(a)	iv or $(\text{C}_2\text{H}_5)_2\text{NH}$ .	1	3
	b)	A $\rightarrow$ $\text{C}_2\text{H}_5\text{-X}$ (alkyl halide)	2	
		C $\rightarrow$ $\text{C}_2\text{H}_5\text{-CH}_2\text{-NH}_2$ (propanamine)	2	
14.	a)	ii or Anomers	1	3
	b)	Definitions or example of denaturation of proteins	1	
	c)	Explains nucleoside or nucleotide	1	
15	a)	One difference or one example of thermoplastics and thermosetting plastics	1	3
	(b) i)	Nylon 6,6 $\rightarrow$ Adipic acid + Hexamethylene diamine.	2	
	ii)	Buna-N $\rightarrow$ 1,3-butadiene + Acrylonitrile	2	
		(Any one from b)		
16.		i, Equanil — (e) Tranquilizer ii, Morphine — (f) Analgesics iii, Tetracycline — (d) Antibiotic iv, Bithional — (b) Antiseptic v, 1% phenol solution — (c) disinfectant vi, Ranitidine — (a) Antacid. (Any 3 correct matches.)	1x3 =3	3