SECOND YEAR HIGHER SECONDARY EXAMINATION (SAY) JUNE 2019

Subject: CHEMISTRY **Code No: SY 25**

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
1.		(d) or Unit Cell	1	1
2.		(b) or Vapour Pressure	1	1
3.		(a) or Al^{3+}	1	1
4.		Depressant	1	1
5.		$(C)\ \Delta_t = \frac{4}{9}\Delta_0$	1	1
6.		Isoprene or 2-methyl buta-1,3-diene or 2-methyl 1,3-butadiene or $CH_2=\underset{CH_3}{C}-CH=CH_2$	1	1
7.		Example for any one analgesic	1	1
8.		Correct explanation or diagram of conductor and semiconductor	2	2
9.		Any one difference between galvanic cell and electrolytic cell	2	2
		Definition of galvanic cell	1	
		Definition of electrolytic cell	1	
		Any one example of each cell (1+1)	2	
10.		Any one difference between order and molecularity	2	2
		Definition of order	1	
		Definition of molecularity	1	
11.		$K = Ae^{-Ea/RT}$ or $\log K = \log A - \frac{Ea}{RT}$ or $\log \frac{K_2}{K_1} = \frac{Ea}{2.303R}\left(\frac{1}{T_1}-\frac{1}{T_2}\right)$	1	2
		Any two terms $(\frac{1}{2}+\frac{1}{2})$	1	
12.		Any two differences of Physical adsorption and Chemical adsorption (1+1)	2	2
13.	(i)	Zinc – (c) or Calamine	2	2
	(ii)	Iron – (d) or Magnetite ($\frac{1}{2}\times 4$)		
	(iii)	Copper – (b) or Malachite		
	(iv)	Aluminium – (a) or Bauxite		

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14.		Any two differences between properties of White and Red phosphorus (1+1)	2	2
15.		Manganese or Mn	2	2
		Explanation	2	
16.		Definition of Lanthanoid Contraction	2	2
		Reason for Lanthanoid Contraction	2	
17.	(i)	Tetracarbonyl Nickel (0)	1	2
	(ii)	Potassium hexacyano ferrate (III) or Potassium hexacyanidoferrate (III)	1	
18.		CH_3-CHO	1	2
		CH_3-MgBr	1	
		Correct equation or explanation	2	
19.		Phenol forms phenoxide ion which is more stable due to delocalisation or any correct explanation	2	2
20.		Definition or one example for homopolymer	1	2
		Definition or one example for copolymer	1	
21.		$a = 2\sqrt{2}\, r$	2	3
		$a = 2\sqrt{2} \times 125 = 353$ pm	2	
		Volume of Unit cell = a^3	2	
		$a^3 = (353 \times 10^{-10}\ cm)^3 = 4.44 \times 10^{-23}\ cm^3$	2	
		No. of Unit cell in $1\ cm^3 = \frac{1}{4.44 \times 10^{-23}}$	2	
22.		Definition/reason/diagram for positive deviation / $\Delta_{mix}H$ = +ve	1½	3
		Definition/reason/diagram for negative deviation / $\Delta_{mix}H$ = −ve	1½	

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23.		Definition of adsorption isotherm	1	3
		$\frac{x}{m} = KP^{1/n}$ / $\log \frac{x}{m} = \log K + \frac{1}{n}\log P$ / Graph	2	
24.		$4NH_3 + 5O_2 \xrightarrow[500K]{Pt/Rh} 4NO + 6H_2O$	1	3
		$2NO + O_2 \longrightarrow 2NO_2$	1	
		$3NO_2 + H_2O \longrightarrow 2HNO_3 + NO$	1	
25.		Substitution Nucleophilic Unimolecular first Order kinetics, intermediate is formed, racemisation occurs (1½+1½)	3	3
		Equation for S_N1 reaction (1½+1½)	3	
26.	a)	$CH_3-CH_2Br + aq.KOH \rightarrow CH_3CH_2OH$	1½	3
	b)	$CH_3-CH_2Br + KCN \rightarrow CH_3CH_2CN$	1½	
	c)	$CH_3-CH_2Br + AgCN \rightarrow CH_3CH_2NC$	1½	
27.		1° amine gives a precipitate which is soluble in excess alkali	1	3
		2° amine gives a precipitate which is insoluble in alkali	1	
		3° amine do not react with Hinsberg reagent	1	
		Or related answer		
28.		Any two differences of RNA and DNA (1½+1½)	3	3
29.		Definition / Example of Antacid	1	3
		Definition / Example of Disinfectant	1	
		Definition / Example of Antibiotics	1	
30.	a)	Explanation or Diagram or Representation of Standard Hydrogen Electrode	3	

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	b)	$E_{cell} = E_{cathode} - E_{Anode}$	1	4
		Substitution or Correct answer	1	
31.		Structure of Cis or Trans isomer	2	
		Cis isomer	2	4
		Non superimposable mirror image or Unsymmetric	2	
32.	a)	Isopropylbenzene or structure	1	
		Explanation or Equation of Preparation	2	4
	b)	Benzoquinone or structure	1	
33.	a)	Explanation or 	2	
	b)	Explanation or		4.
		$2CH_3CHO \xrightarrow{dil.NaOH} CH_3-CH(OH)-CH_2-CHO \xrightarrow[-H_2O]{\Delta} CH_3-CH=CH-CHO$	1 1	

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