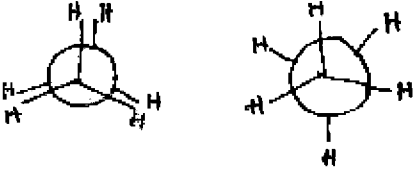


FIRST YEAR HIGHER SECONDARY EXAMINATION MARCH 2019

SUBJECT : CHEMISTRY

CODE. NO: FY 25

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
1.		Absolute zero / -273°C / OK.	1	7
2.		NH_3	1	
3.		3-Ethyl - 1,1 - dimethyl cyclohexane	1	
4.		Li_2O / Equation for formation of oxide / Name of compound (Lithium oxide / Lithium monoxide)	1	
5.		Zero / $q \pm W$	1	
6.		$\frac{h}{4\pi}$	1	
7.		$0.052 / 5.2 \times 10^{-2}$	1	
8.		 Figures without 'H' also may be considered as correct answer.	1+1	2
9.		$\text{pH} = -\log_{10} [\text{H}_3\text{O}^+]$ Substitution $\text{pH} = -\log [2 \times 10^{-2}]$	1 1 1	2
10.		AlCl_3 or BeCl_2 Fajan's rule Covalent character increases as charge on cation increases	2 2 2	2

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
11.		Correct explanation Correct Diagrammatic representation/Eqn	1+1 1+1	2
12.		Black Body radiation, photoelectric effect, Atomic spectra, Hot body radiation, Line spectrum, reflection, Compton effect One correct point	2	2
13		General trend of $\Delta_g H$ in the periodic table Variation of trend in EGE in the case of Cl and F Explanation related to EGE Definition of electron gain enthalpy	2 2 2 1	2
14.		$K_c = \frac{[NO]^4 [H_2O]^6}{[NH_3]^4 [O_2]^5}$ $K_c' = K_c^2$	2 2	2
15.		Correct products - Methanol and Ethanal Explanation of the reaction $CH_3-CH=CH_2 + O_3 \rightarrow \begin{array}{c} O \\ \diagup \quad \diagdown \\ CH_3-CH \quad CH_2 \\ \diagdown \quad \diagup \\ O \end{array}$ $\begin{array}{c} O \\ \diagup \quad \diagdown \\ CH_3-CH \quad CH_2 \\ \diagdown \quad \diagup \\ O \end{array} \xrightarrow{Zn/H_2O} CH_3CHO + CH_2O$	1x2 2 2 2	2
16		Correct structure 4, B-H bonds / 2 centre $2e^-$ bond / normal Covalent bond. 2, B-H-B bonds / 3 centre $2e^-$ bond / multi centred bond Banana bond	2 1 1	2

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
17		Definition of spontaneous process $\Delta G_1 < 0$ or $\Delta G = -ve$	1 } 1 }	2
18		$M = \frac{dRT}{P}$ $\frac{M_1}{M_2} = \frac{d_1}{d_2}$ $\frac{32}{16} = \frac{d_1}{d_2}$ $d_1 = 2d_2$ density of $O_2 = 2 \times$ density of CH_4 Density relation = 2:1 Calculation using $d = \frac{\text{Molar mass}}{\text{Molar volume}}$	1 } 1 } 1 } 1 } 1 } 1 } 1 }	2
19.		Correct Lewis structure of O_3 Calculation of formal charges of O atoms Equation of formal charge	2 } 2 } 1 }	2
20		Electronic configuration of Al + S Correct group or period of Al and S Al_2S_3	1 } 1 } 1 }	2
21		Two reasons for anomalous behaviour of Li Two points of similarities b/w Li + Mg	2 } 2 }	3
22.		Hydrolysis of three types of salts	3 }	
		Correct examples for each type Correct description of pH of resulting solution (Acidic/ Basic/ Amphoteric basic depending on concentration) Strong acid + Strong base $\rightarrow$ No hydrolysis	3 } 3 } 1 }	3

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
23		Explanation of acid rain Correct description or equation for the formation of acid rain Two Harmful effects	$1\frac{1}{2}$ $1\frac{1}{2}$ $1\frac{1}{2}$	3
24		Hydrogenation of alkynes - Eqn. cis and trans isomers of alkenes representation	3 3	3
25		Balanced Equation $N_2 + 3H_2 \rightarrow 2NH_3$ Calculation of no. of moles of N_2 and H_2 Correct prediction of limiting reagent as H_2 Correct calculation and result without Definition of limiting reagent	1 1 1 1 1	3
26		M.O. electronic configurations or diagrams of N_2 or O_2 Correct comparison of stability Bond Order calculation or formula or definition Correct comparison of magnetic behaviour	2 2 2 2	3
27		Two reasons (two faulty assumptions of kinetic theory) Correct conditions of T+P Correct definition of Boyle point	2 2 2	3

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
28.		Correct structure of H_2O_2 One method of preparation of H_2O_2 One chemical reaction of H_2O_2	2 2 2	3
29.		Assigning oxidation states of atoms Related Equation	3 3	3
30.		Name of four quantum numbers Two quantum numbers (names and explanation) Pauli's Exclusion principle - statement Correct explanation for the importance of quantum numbers in Pauli's principle	2 4 2 2	4
31		Correct definition of silicons Correct equations By adding $(CH_3)_3SiCl$ which blocks the ends or the equation showing this	2 4 2	4
32.		Name of four structural isomerism Explanation of two structural isomerism with examples Definition of structural isomerism	4 2x2 1	4

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
33.	(i)	correct statement of the ^{Heys} law	4	4
	(ii)	Correct solution to the problem (or) Related equations	4	
			4	