

FIRST YEAR HIGHER SECONDARY EXAMINATION SAY/IMP SEPTEMBER 2016

(Scheme of Valuation)

Subject : Chemistry

Code No. 416



Qn. No	Scoring Indicators	Split Score	Total Score
1	<p>a) $MF = n \times EF$ or Definitions</p> <p>b) Correct EF calculation</p> <p>$EF = CH_2Br$ (formula only)</p> <p>$MF = C_2H_4Br_2$ (formula only)</p> <p>Both EF and MF</p> <p>c) Definition or $X_A = \frac{n_A}{n_A + n_B}$ or</p> <p>$X_B = \frac{n_B}{n_A + n_B}$</p>	<p>1</p> <p>2</p> <p>1</p> <p>1</p> <p>2</p> <p>1</p>	4
2.	<p>a) Any two postulates of Bohr Model</p> <p>b) $\bar{V} = \frac{1}{\lambda} = R_H \left[\frac{1}{n_1^2} - \frac{1}{n_2^2} \right]$</p> <p>Equation with substitution</p> <p>a) Statement of Hund's rule or Explanation</p> <p>b) i) principal quantum number (n)</p> <p>ii) Azimuthal or subsidiary quantum number or l.</p> <p>• Any one quantum number only</p>	<p>2</p> <p>2</p> <p>3</p> <p>2</p> <p>1½</p> <p>1½</p> <p>1½</p>	5
3.	<p>a) Name of any two blocks or Explanation of any one block</p> <p>b) i) Electronic configuration of B and C or Small size of carbon or Increase in effective nuclear charge/IE increases from left to right in a period.</p>	<p>2</p> <p>2</p>	



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	or ii) Small size / High electronegativity / charge/radius ratio or high IE or non availability of d orbitals . or any two Anomalous properties • Anomalous property	2 1	4
4.	a) Any two postulates b) pyramidal or 107° or sp^3 hybridised or lone pair / repulsions c) unstable / axial or equatorial bond / shape / sp^3d / bond angle or figure	2 1 2	5
5	a) By combining 3 gas laws and derive ideal gas equation $PV = nRT$ only b) Any choice given or correct answer (1200k) c) Surface tension / minimum surface area	2 1 1 1	4
6.	a) iv or dissolution of a solute b) Statement of Hess's law or Explanation or one example	1 3	4



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7.	a) i) $K_{sp} = S^2$ or $K_{sp} = [x^x \cdot y^y \cdot S^{x+y}]$ or $BaSO_4 \rightleftharpoons Ba^{2+} + SO_4^{2-}$ ii) $S = \sqrt{K_{sp}}$ Substitution	1 1 1	5
8.	a) $Zn(s) + Cu^{2+} \rightarrow Zn^{2+} + Cu(s)$ or oxidation half reaction or Reduction half reaction or cell representation $Zn Zn^{2+} Cu^{2+} Cu$ b) yes only or correct explanation / Displacement reaction or equation	1 1 2	3
9.	a) Similarities with 1st group and 17th group (any one) / separate position b) i) Due to oxidation / Nascent oxygen or equation OR ii) presence of holes / voids / open cage like structure / H-bonding	2 2 2	4



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10.	a) i) Caustic Soda - (3) Castner Kellner Cell. ii) Sodium carbonate - (4) Solvay process iii) Magnesium Hydroxide - (1) Antacid iv) Sodium bicarbonate - (1) Antacid or (2) mild Antiseptic Any two ----- b) Any two raw material (clay, limestone...) or Definition of cement	2 2	4
11.	a) Absence of d orbital in Carbon or presence of d orbital in Silicon b) Any one difference / Structure / explanation	2 2	4
12.	a) i) $\text{CH}_3\text{-CH}_2\text{-CH=CH}_2$ or 1-butene or but-1-ene ii) $\text{CH}_3\text{COCH}_2\text{CH}_3$ or 2-Butanone or Butan-2-one b) Correct explanation or equation c) Definition or explanation or one Example. Any three (3x2)	2 2 2 2	6



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13	<p>a) i)</p> <p>1) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3$ / Butane</p> <p>2) $\text{C}_6\text{H}_5\text{CH}_3$ / Toluene</p> <p>ii) Kolbe's electrolysis</p> <p>Friedel Craft's reaction</p> <p>b) KMnO_4</p> <p>c) Ethylene glycol / $\begin{array}{c} \text{CH}_2 - \text{CH}_2 \\ \quad \\ \text{OH} \quad \text{OH} \end{array}$</p> <p>or 1,2 dihydroxy ethane</p> <p>or 1,2 ethane diol.</p>	2 2 2 2 1 2	5
14	<p>a) Definition of green house effect / Green house gases</p> <p>OR</p> <p>b) Consequence of green house effects</p>	3 3	3