

Name : _____ R. No. _____ Class/ Sec: _____ Date: _____ Invig. Sign _____

ATOMIC ENERGY CENTRAL SCHOOL, NARORA
CLASS XII CHEMISTRY UNIT TEST FIRST 2018-19

MM : 50

TIME : 1 Hr. 30 Min.

General Instructions:

- All questions are compulsory and marks are mentioned in front of each question.
- Electronic devices are prohibited to use in the examination.
- Use Blue or Black Pen only.

Q1- Define with suitable example

(1 x 3 = 3)

(i) F centre (ii) Shape selective catalysis (iii) Blister copper

Q2- In an ionic solid A occupy the two third of the faces and B occupy $\frac{1}{4}^{\text{th}}$ of the octahedral voids. Predict the formula of the ionic solid. (2)

Q3 - Explain cyanide process.

(2)

OR

What is flux ? Write chemical reaction of slag formation in Blast & Reverbratory Furnace.

Q4- Explain vapour phase refining with suitable example.

(3)

Q5- Find the fraction of Ni^{2+} and Ni^{3+} present in $\text{Ni}_{0.98}\text{O}_{1.00}$.

(3)

Q6- Define colligative properties. Calculate the Vant Hoff factor (i) for $\text{K}_4\text{Fe}(\text{CN})_6$, which is 90% dissociated

(3)

Q7- 29.2% (w/w) HCL stock solution has a density of 1.25 g/ml.

Calculate the volume of stock required to prepare a 200ml solution of 0.4 M HCL.

(3)

Q8- 13.44 g of CuCl_2 dissolved in 1 kg of water as solvent. Find the elevation in Boiling point. ($K_b = 0.52 \text{ kg mol}^{-1}$; Molar mass of $\text{CuCl}_2 = 134.4 \text{ g/mol}$)

(3)

Q9- State Kohlrausch law. Write its two applications.

(3)

OR

What do you mean by secondary battery? Write equations for Hg cell.

- Q10- Define equivalent and molar conductivity. Resistance of a conductivity cell filled with 0.1 M KCL solution is 100 ohm. If the resistance of the same cell when filled with 0.02 M KCL solution is 520 ohm. Calculate the conductivity and molar conductivity of 0.02 M KCL solution. Conductivity of 0.1 M KCL solution is 1.29 S m^{-1} . (5)
- Q11- Write Nernst equation for Galvanic cell. Calculate the number of coulombs required to deposit 40.5 g of Al when electrode reaction is $\text{Al}^{3+} + 3\text{e}^- \rightarrow \text{Al (s)}$ (5)
- Q12- Derive the expression $R = R_0 e^{-kt}$. Calculate $T_{3/4}$ for first and zero order reactions. (5)
- Q13-a-Define activation energy and activated complex.
b-The rate of a reaction triples when temperature changes from 50°C to 100°C . Calculate E_a . (5)
- Q14- a-State a.Hardy Schulze law b.coagulation c. peptization.
b- Write utility of Ellingham diagram with example. (5)
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