

Seat No.	
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B.Sc. (Part - III) (Semester - V) (CBCS)**Examination, October - 2023****CHEMISTRY****Physical Chemistry (Paper - XI)****Sub. Code : 79684**

Day and Date : Friday, 27 - 10 - 2023

Total Marks : 40

Time : 10.30 a.m. to 12.30 p.m.

- Instructions :
- 1) All questions are compulsory.
 - 2) Figures to the right indicate full marks.
 - 3) Draw neat labelled diagrams and give equations wherever necessary.
 - 4) Use of scientific calculator and logarithmic table is allowed.

Q1) A) Answer the following in one sentence only. **[4]**

- i) Define single electrode potential.
- ii) Define Rayleigh or elastic Scattering.
- iii) Define critical solution temperature or CST.
- iv) Define the Quantum yield (Φ).

B) Select the most correct alternative from the following. **[4]**

- i) In Concentration cells, emf is produced due to decrease in _____ accompanying the cell reaction.
 - a) enthalpy
 - b) free energy
 - c) entropy
 - d) kinetic energy
- ii) When the temperature coefficient of the cell becomes zero, the free energy change of the cell reaction is equal to _____.
 - a) zero
 - b) enthalpy change
 - c) entropy change
 - d) internal energy

P.T.O.

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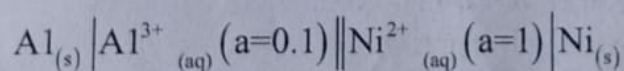
- iv) How many known species are there?

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- Explain metal - metal ion electrode.
- Calculate the emf of the cell at 298K.



$$E^{\circ}_{\text{Al}^{3+}/\text{Al}} = -1.66\text{V}, E^{\circ}_{\text{Ni}^{2+}/\text{Ni}} = -0.236\text{V}$$

