MODEL PAPER
SECOND YEAR B.Sc., DEGREE EXAMINATION
SEMESTER-IV
CHEMISTRY COURSE V: INORGANIC & PHYSICAL CHEMISTRY

Time: 3 hours   Maximum Marks: 75

PART- A 5 X 5 = 25 Marks

Answer any **FIVE** of the following questions. Each carries **FIVE** marks

1.   Write note on Jahn-Teller distortion.
2.   Explain Labile & inert complexes.
3.   Explain Job's method for determination of composition of complex.
4.   Explain Thermodynamic derivation of Gibb's phase rule.
5.   Explain any two conductometric titrations.
6.   Write note on Fuel Cells with examples and applications.
7.   What is enzyme catalysis? Write any three factors effecting enzyme catalysis.
8.   Derive Michaels- Menten equation.

PART- B   5 X 10 = 50 Marks

Answer **ALL** the questions. Each carries **TEN** marks

9 (a).   Explain Valence Bond theory with Inner and Outer orbital complexes. Write limitations of VBT.

(or)

  (b).   Define CFSE. Explain the factors effecting the magnitude of crystal field splitting energy.

10 (a).   Explain Trans effect. Explain the theories of trans effect and write any two applications of trans effect.

(or)

  (b). (i) Write the biological functions of Haemoglobin and Myoglobin.
       (ii) Write note on use of chelating agents in medicines.

11.(a).   Define Phase rule and terms involved in it. Explain phase diagram of Pb-Ag system.

(or)

(b). (i) Explain phase diagram for NaCl-water system.
(ii) Explain briefly about Freezing mixtures.

12.(a). Define Transport number. Write experimental method for the determination of transport number by Hittorf method.

<div align="center">(or)</div>

(b).(i) Define single electrode potential.
(ii) Explain four types of electrodes with examples.

13.(a). Explain general methods for determination of order of a reaction.

<div align="center">(or)</div>

(b).Explain Collision theory and Activated complex theory of bimolecular reactions.

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