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BSCchMJ202x-1C

Seat No : \_\_\_\_\_

B.Sc. Semester - 1 (NEP-2020) Examination

OCT/NOV-2025

CHE: Introductory Chemistry -2 (Major-2)

Time: 2:00 Hours

Marks:50

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

- Que.1 Answer the following question. (10)
- 1) Explain MO diagram of  $N_2$  with calculation of bond order and magnetic moment.
  - 2) Discuss comparisons of VBT and MOT.
- OR
- Que.1 Answer the following question.
- 1) Explain MO diagram of  $O_2$  with calculation of bond order and magnetic moment.
  - 2) What is hybridization? Explain  $sp^2$  hybridization in  $SO_2$ .
- Que.2 Answer the following question. (10)
- 1) Differentiate:  $SN^2$  Vs  $SN^1$  reaction in detail.
  - 2) Differentiate: Enantiomers and Diastereomers.
- OR
- Que.2 Answer the following question.
- 1) Write halogenation, sulfonation and nitration reaction of alkanes.
  - 2) For erythro tartaric acid, draw Fisher projection and convert it in show-horse and Newmann formula.
- Que.3 Answer the following question. (10)
- 1) Explain application of colloidal solution.
  - 2) Explain purification of colloidal solution by dialysis method.
- OR
- Que.3 Answer the following question.
- 1) Give preparation of Lyophobic colloidal solution.
  - 2) Write a note: (a) Gold number (b) Brownian movement.
- Que.4 Answer the following question. (10)
- 1) Differentiate BMO and ABMO.
  - 2) Define: Chirality, Stereoisomers, Homomoers, Constitutional isomers.
- OR
- Que.4 Answer the following question.
- 1) Discuss main points of VSEPR theory.
  - 2) Explain reactivity and selectivity in halogenation of alkanes.
- Que.5 Answer the following question. (10)
- 1) Discuss classification of stereoisomers based on superimposability and energy criterion.
  - 2) Discuss electrical properties of colloidal solution.
- OR
- Que.5 Answer the following question.
- 1) What are geometrical isomers? Explain its nomenclature with suitable example.
  - 2) Discuss classification of Colloids based on nature of interaction between dispersed phase & dispersion medium.

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