

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 saw-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, Homomers, 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.
