

B.Sc. Semester - 3 (NEP-2020) Examination

OCT/NOV-2025

CHE: Intermediate Chemistry-206 (Major-6)

Time: 2:00 Hours

Marks:50

Instructions:

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

Que.1 Answer any two out of three questions given. (10)

- 1) Derive Schrodinger wave equation.
- 2) Write postulates of wave mechanics.
- 3) What are the nitrogenous fertilizers? Explain production of ammonium nitrate using prilling method.

Que.2 Answer any two out of three questions given (10)

- 1) Explain LiAlH_4 reduction of aldehyde and ketone with mechanism.
- 2) Write any five reactions of monocarboxylic acid.
- 3) Explain structure and write two synthetic applications of Ethylacetoacetate.

Que.3 Answer any two out of three questions given. (10)

- 1) Explain Joule-Thompson effect.
- 2) Explain additive and constitutive properties with an example. Explain drop method used to measure surface tension.
- 3) Derive integrated Kirchoff's equation.

Que.4 Answer any two out of three questions given. (10)

- 1) What is two component system? Give classification of two component system.
- 2) Briefly explain points for the manufacture of Portland cement.
- 3) Discuss Beckmann rearrangement in detail.

Que.5 Answer any two out of four questions given. (10)

- 1) Derive coefficients of sp hybridization.
- 2) Describe two component partially miscible liquid pair.
- 3) Write three addition reactions of carbonyl compound.
- 4) Find work done when one mole of an ideal gas at 25° is allowed to expand reversibly and isothermally from 5 atm. to 1 atm. ($R=8.314 \text{ Joule mole}^{-1} \text{ K}^{-1}$)
