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BSCchMJ209x-4C

Seat No : _____

B.Sc. Semester - 4 (NEP-2020) Examination

March/April-2026

CHE: Intermediate Chemistry-209 (Major-9)

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. (Any two) (10)
- (1) Discuss particle in one dimensional box.
 - (2) What is degeneracy? Explain in detail.
 - (3) Discuss methods for manufacture of soap.
- Que.2 Answer the following question. (Any two) (10)
- (1) Give the synthesis of nicotine.
 - (2) Explain constitution of citral.
 - (3) Give preparation of LiAlH_4 and write any four applications of LiAlH_4 .
- Que.3 Answer the following question. (Any two) (10)
- (1) State the difference between order and molecularity of the reaction.
 - (2) Derive the equation of rate constant for first order reaction and state its characteristic.
 - (3) Describe the tests of third law of thermodynamics.
- Que.4 Answer the following question. (Any two) (10)
- (1) Discuss the role of hemoglobin in oxygen transfer.
 - (2) Write any five synthesis methods of pyrrole.
 - (3) Derive Nernst distribution law using chemical potential.
- Que.5 Answer the following question. (Any two) (10)
- (1) Give the definition of operator and discuss addition and subtraction operator.
 - (2) Explain Curtius rearrangement with mechanism.
 - (3) Explain the determination of absolute entropy of solid by third law of thermodynamics.
 - (4) Write any five-chemical reaction of furan.
