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BSCchMJ208x-4C Seat No :_____

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

March/April-2026

CHE: Intermediate Chemistry-208 (Major-8)

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 the application of co-ordination compounds in various fields.

(2) Explain Werner's theory with limitations.

(3) Explain bonding and structure of Zeise salt.

Que.2 Answer the following question. (Any two) (10)

(1) Construct multiplication table for C_{2v} with suitable example.

(2) Differentiate σv, σh and σd.

(3) Prove that $S_n^{2n}=E$ when n is odd by giving the example of eclipsed ethane.

Que.3 Answer the following question. (Any two) (10)

(1) Explain Carnot's cycle with its operation in detail.

(2) Derive the equation for entropy change in mixing of ideal gas.

(3) Derive Gibbs Helmholtz equation.

Que.4 Answer the following question. (Any two) (10)

(1) Explain Dry Process for hydrogenation of oil.

(2) Give difference between Enantiomers and Diastereomers.

(3) Derive Van't Hoff isotherm equation.

Que.5 Answer the following question. (Any two) (10)

(1) (a) Write a note on Ionization isomerism. (03)

(b) Give any two uses of organo magnesium compound. (02)

(2) (a) Give one difference between Cn and Sn. (03)

(b) Deduce point group of CO_2 and allene. (02)

(3) Two moles of an ideal gas are allowed to expand reversibly and isothermally at 300 K from pressure of 1 atm to 0.1 atm. What is the change in Gibbs free energy ($R = 1.987$ cal $K^{-1}mol^{-1}$)

(4) Discuss Saponification value and acid value for oil & fats.

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