

Branch-CHEMISTRY

GENERAL CHEMISTRY-IH

Time : Three Hours

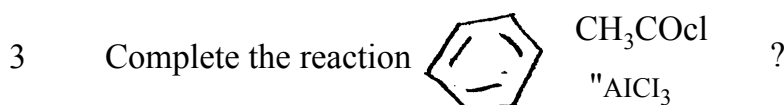
Maximum : 75 Marks

SECTION-A (20 Marks)

Answer ALL questions

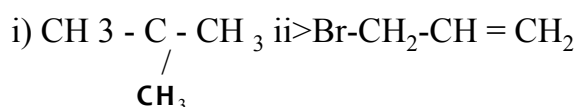
ALL questions carry EQUAL marks (10x2 = 20)

- 1 Give any two uses of Diborane.
- 2 -. Write the structure of SO_5^{2-} and $\text{S}_2\text{O}_8^{2-}$ ions.



- 4 Draw the Cis- and trans isomers of crotonaldehyde.
- 5 Write any two preparations of Dihydric alcohols.
- 6 Give the IUPAC name of the following halide compound.

X



- 7 State second law of thermodynamics.
- 8 Define Entropy and efficiency.
- 9 Write the Gibbs-Deuhem equation.
- 10 Write the expression for K_p and K_c.

SECTION - B (25 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 5 = 25)

- 11 a Explain the structure of silicones and mention any two uses.
OR
b Describe the structure and preparation of IF₅.
- 12 a Discuss the preparation and properties of Acrolein.
OR
b How does cinnamic acid react with the following reagents.
i) Na / Hg, H₂O ii) Chromic acid iii) NaOH, CaO.
- 13 a Explain the preparation and any three properties of CCl₄.
OR
b Describe the preparation and properties of Dihydric phenol.
- 14 a Explain the Entropy change of an ideal gas with changes in P, V and T.
OR
b Derive the Gibbs - Helmholtz equation.
- 15 a Write a note on Nernst heat theorem.
OR
b Derive the Clausius equation.

SECTION - C (30 Marks)

Answer any THREE Questions

ALL Questions Carry EQUAL Marks (3 x 10 = 30)

- 16 Discuss the preparation and properties of i) Barazole and ii) Dithionic acid.
- 17 a Explain the properties of Benzaldehyde in detail. *
b Discuss the preparation and any three properties of Acrylic acid,
- 18 a Explain the preparation, any two properties and uses of CHCl_3 .
b How will you distinguish primary, secondary and tertiary alcohols?
- 19 Explain the Carnot cycle in detail.
- 20 a Briefly discuss the Le-Chatelier's Principle. ;
b Derive the Van't Hoff equation.

Z-Z-Z

END