

BOARD OF INTERMEDIATE EDUCATION

JUNIOR INTER CHEMISTRY

MODEL PAPER (English Version)

Time : 3 Hours

Max.Marks : 60

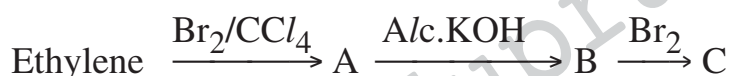
SECTION – A

I. (i) Very Short Answer Type questions.

(ii) Answer ALL questions.

(iii) Each question carries TWO Marks. 10 × 2 = 20

1. Calculate RMS and most probable speed of O₂ molecules at 27°C.
2. Write about the biological importance of Calcium and Magnesium.
3. Mention 2 Oxides each responsible for a) Acid rains and b) Green house effect.
4. How does graphite function as a lubricant?
5. SiO₂ is a solid while CO₂ is a gas. Explain.
6. What is 'Heterogeneous equilibrium'? Give one example.
7. Give the reactions that take place at anode and cathode in Castner–Kellner process.
8. Define the terms 'BOD' and 'COD'.
9. The empirical formula of a compound is CH₂O. Its vapour density is 45. Find the molecular formula of the compound.
10. Name the products A and C in the following reaction



SECTION – B

II. (i) Short Answer Type questions.

(ii) Answer any SIX questions.

(iii) Each question carries FOUR Marks. 6 × 4 = 24

11. Derive a) Graham's law of diffusion and b) Dalton's law of partial pressures from Kinetic gas equation.
12. a) Calculate the molarity of NaOH in the solution prepared by dissolving 4 g in enough water to form 250 ml of the solution.
b) Calculate the mass of Na₂CO₃ required to prepare 250 ml of 0.5 N solution.

13. State Hess's law of constant heat summation. Explain this law during the formation of CO_2 from Graphite.
14. a) State Lechatlier's principle.
b) What are Lewis acids and Lewis bases?
15. How H_2O_2 is prepared by electrolytic method? Give 1 oxidising & 1 reducing property of H_2O_2 .
16. What is borax? Explain the borax bead test with suitable example.
17. Give 1 method of preparation of acetylene. How does it react with water and ozone? Give equations.
18. Discuss Markowni Kov's rule and Kharash effect.

SECTION - C

III. (i) Long Answer Type questions.

(ii) Answer any TWO questions.

(iii) Each question carries EIGHT Marks.

$2 \times 8 = 16$

19. Write any two postulates & two limitations of Bohr's model of an atom. Explain how spectral lines are formed in the hydrogen spectrum with a neat diagram.
20. What is first and second Ionization Enthalpies? Why $\text{I.E}_2 > \text{I.E}_1$ for a given atom? Discuss any 4 factors that affect the ionization enthalpy of an element.
21. a) Explain coordinate covalent bond with the help of NH_4Cl ion and H_3O^+ ion.
b) Write molecular orbital configuration of N_2 and O_2 . Calculate bond order of N_2 and O_2 .