GUESS PAPER - 2

JR. CHEMISTRY

SECTION - A

I. Answer ALL questions:

 $[10 \times 2 = 20]$

- 1. What is Biochemical Oxygen Demand (BOD)?
- 2. Define Receptor Sink.
- 3. Which gas diffuses faster among N₂, O₂, CH₄ gases? Why?
- 4. The emperical formula of a compound is \overline{CH}_2O . Its molecular weight is 90. Calculate the molecular formula of the compound.
- 5. Calculate the pH of 0.05 M H₂SO₄ solution.
- 6. Write the average composition of portland cement.
- 7. Give the formula and structure of Borazine (or Borzine).
- 8. What is allotropy? Give the crystalline allotropes of carbon.
- 9. What is meant by Dry ice? Give its applications.
- 10. Write IUPAC names of the following:

SECTION - B

II. Answer any SIX of the following Questions:

 $[6 \times 4 = 24]$

- 11. State and explain Grahm's law of diffusion.
- 12. A carbon compound contains 12.8% carbon, 2% hydrogen, 85.1% bromine. The molecular weight of the compound is 187.9. Calculate the molecular formula.
- 13. Define heat capacity? What are C_p and C_v ? Show that $C_p C_v = R$.
- 14. State Le-Chatlier's principle and apply it to the synthesis of ammonia by Haber's process.
- 15. Write any four reducing properties of hydrogen peroxide. Give equations.
- 16. Explain Borax bead test with a sutiable example.
- 17. What is Hydrogen bond? Explain the different types of hydrogen bonds with example.
- 18. How is acetylene prepared form the following compounds:
 - a) Calcium carbide
- b) 1,2-dibromoethane

SECTION - C

III. Answer any Two of the following Questions:

[2 x 8 = 16]

- How are the quantum number n, I and m₁ arrived at? Explain the significance of these quantum numbers.
- 20. Define IE_1 and IE_2 . Why is $IE_2 > IE_1$ for a given atom? Discuss the factors that effect IE on an element
- 21. Describe any two methods of preparation of benzene with corresponding equations. Explain the following benznee reactions
 - (a) Halogenation
- (b) Alkylation
- (c) Acylaton
- (d) Nitraton

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