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. Write Van der Waals equation of state. Give the physical significance of Van der Waals parameters.

2. What do you mean by "significant figures"? Give the number of significant figures present in 100.0.

3. What is pH? Calculate pH of a 1.0×10^{-8} M solution of HCl.

4. $[SiF_6]^{-2}$ is known where as $[SiCl_6]^{-2}$ not. Give possible reasons.

5. Classify the following oxides as neutral, acidic, basic or amphoteric.

a) Tl_2O_3 b) Al_2O_3 c) SiO_2 d) CO

6. An aqueous solution of Na_2CO_3 is alkaline. Why?

7. Give two uses of quick lime.

8. What are the harmful effects caused by ozone layer depletion?

9. Define the terms "Sink" and "TLV".

10. Write the IUPAC names of the following compounds.

a) $(CH_3)_2$ $(C_2H_5)_2$ b) 

SECTION – B

II. (i) Short Answer Type questions.

(ii) Answer any SIX questions.

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

11. State Graham's law of diffusion? Give two applications of this law.

12. What is empirical formula? Chemical analysis of a Carbon compound gave 10.06% carbon, 0.84%, Hydrogen and 89.10% Chlorine. Calculate the empirical formula of the compound.

13. Define a) enthalpy of combustion

b) standard enthalpy of formation.

14. State Lechatlier's Principle. Discuss the principle in brief for the industrial synthesis of SO_3.

15. Write any two methods of preparation of diborane. How does it react with

a) CO b) NH_3.

16. Explain with one example for the following:

a) Interstitial hydride b) Ionic hydride

c) Electron deficient hydride d) Electron rich hydride

17. How does acetylene react with the following?

a) H_2O b) HC*l* c) Ammonical $AgNO_4$ d) Cl_2

18. Discuss Markownikov'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 × 8 = 16**

19. What is a periodic property?

How do the following properties change in group – I and 3rd period? Explain with example

a) Atomic radius b) Nature of oxides c) Electron gain enthalpy

20. Write the important postulates of Bohr's model of Hydrogen atom? Discuss the importance of this model to explain various series of line spectra in Hydrogen atom.

21. a) Explain the geometry of H_2O and NH_3 on the basis of VSEPR theory.

b) Give molecular orbital energy diagram of N_2. Calculate its bond order. Write the magnetic nature of N_2 molecule.

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