BOARD OF INTERMEDIATE EDUCATION

JUNIOR INTER MODEL PAPER – 2020

CHEMISTRY

TIME: 3 Hours **(English Medium)** **Max. Marks: 60**

SECTION - A

i) Very short answer type questions.

ii) Answer all the questions.

iii) Each question carries two marks. **10 × 2 = 20**

1. 360 cm^3 of CH_4 gas diffused through a porus membrane in 15 minutes. Under similar conditions, 120 cm^3 of another gas diffused in 10 minutes. Find the molar mass of the gas.

2. Calculate the oxidation number of Oxygen element in the given species.

a) $Ca\underline{O}_2$ b) $\underline{O}F_2$

3. When mixed with water, real cement will set immediatly, How to overcome this problem?

4. What is 'sink'? Give two examples.

5. Name one use each of

a) Quartz b) Silica gel

6. Write the biological importance of Ca^{+2}, Mg^{+2} ions.

7. Define 'equilibrium constant'? Will it change with temperature?

8. Graphite function as lubricant. Why?

9. What is 'COD'?

10. Write the functional isomers of the organic compound C_3H_6O.

SECTION - B

i) Short answer type questions.

ii) Answer any six questions.

iii) Each question carries 4 marks. **6 × 4 = 24**

11. Deduce a) Boyle's law b) Charles' law from Kinetic gas equation.

12. Balance the following redox reaction by ion-electron method in basic medium.

MnO_4^- (aq.) + I^- (aq.) → MnO_2 (s) + I_2 (s)

13. Explain hybridization of phosphorus in the formation of PCl_5.

14. Define a) Enthalpy b) Entropy

15. Explain Lewis acid-base theory with suitable examples.

16. Explain the following with one example each.

a) Electron deficient hydrides b) Electron rich hydrides

c) Electron pricise hydrides d) Ionic hydrides

17. a) What is 'inert pair effect'?

b) Give the formula, structure, common name of borazine.

18. Explain the formation of coordinate covalent bond with example.

SECTION - C

i) Long answer type questions.

ii) Answer any two questions.

iii) Each question carries 8 marks. **$2 \times 8 = 16$**

19. a) Explain the difference between emission spectra and absorption spectra.

b) Discuss the importance of Bohr's model atom to explain various series of line spectra in Hydrogen atom.

20. Define Electron gain enthalpy and Electronegativity. How these properties varies in groups and periods.

21. Give two methods of preparation of ethylene. How does it react with

a) Br_2/ CCl_4 b) O_3

c) HBr d) Cold, dilute alkaline $KMnO_4$

-ANS Sankara Rao