

# BOARD OF INTERMEDIATE EDUCATION

## JUNIOR INTER CHEMISTRY

### MODEL PAPER

Time: 3 hours

Max. Marks: 60

#### SECTION - A

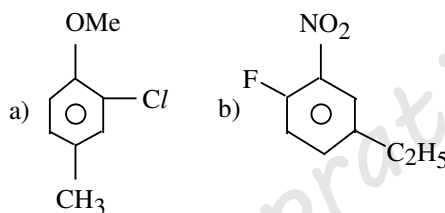
I. i) Very short answer type questions.

ii) Answer ALL questions.

iii) Each question carries TWO marks.

10 × 2 = 20

1. What is 'Plaster of Paris'? Mention one use of it.
2. What are 'Silicones'? Give one use of it.
3. Calculate pH of 0.05 M Ba(OH)<sub>2</sub> solution.
4. What is 'Boltzman's constant'? Give its values in CGS, SI systems.
5. LiI is most covalent among the Alkali metal halides. Give the reasons.
6. Calculate oxidation states of underlined elements.  
a) H<sub>2</sub>PO<sub>2</sub><sup>-</sup>      b) H<sub>2</sub>SO<sub>5</sub>
7. Give two effects of Ozone layer depletion.
8. Diamond is hard and an abrasive. Explain.
9. Name two acid oxides that cause acid rains? Give pH value of acid rain?
10. Give IUPAC names of



#### SECTION - B

II. i) Short answer type questions.

ii) Answer any SIX questions.

iii) Each question carries FOUR marks.

6 × 4 = 24

11. Explain borax bead test with one suitable example.
12. a) State Dalton's law of partial pressure.  
b) Calculate RMS speed of SO<sub>2</sub> at 27° C.
13. State and explain Hess's law of constant heat summation with one example.
14. A Carbon compound on analysis gave Carbon 14.5%, Hydrogen 1.8%, Chlorine 64.46% and Oxygen 19.24%. Calculate the empirical formula of the compound.

15. State Le Chatelier's principle. Discuss the application of Le Chatelier's principle for the industrial synthesis of ammonia.
16. What are temporary hardness and permanent hardness of water? How is permanent hardness removed by Calgon process and Ion exchange process?
17. What is dative bond? How  $\text{NH}_4^+$ ,  $\text{H}_3\text{O}^+$  are formed? Explain.
18. Explain the hybridization involved in the formation of  $\text{SF}_6$ .

### SECTION - C

III. i) Long answer type questions.

ii) Answer any TWO questions.

iii) Each question carries EIGHT marks.

$2 \times 8 = 16$

19. Explain the significance of four quantum numbers associated with an electron in an atom.
20. Define  $\text{IE}_1$  and  $\text{IE}_2$ . Why is  $\text{IE}_2 > \text{IE}_1$  for a given atom? Discuss any 4 factors that affect IE of an element.
21. a) Discuss Markovnikov's rule and Kharasch effect.  
b) How does ethylene reacts with the following  
i)  $\text{Cl}_2$     ii)  $\text{HBr}$     iii)  $\text{O}_3$     iv) Cold dilute alkaline  $\text{KMnO}_4$