

Class 11 - Chemistry

P BLOCK 11TH

Maximum Marks: 75

Time Allowed: 2 hours

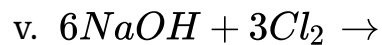
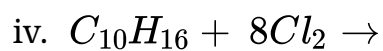
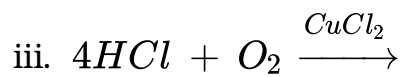
General Instructions:

ANSWER ALL QUESTIONS

Section A

1. Describe the shapes of BF_3 and BH_4^- . Assign the hybridisation of boron in these species. 2
2. Complete the following reaction: 2
 - i. $\text{C}_2\text{H}_4 + \text{O}_2 \rightarrow$
 - ii. $4\text{Al} + 3\text{O}_2 \rightarrow$
3. Give reasons: Aluminium alloys are used to make aircraft body. 2
4. Explain the following reactions. CO is heated with ZnO. 2
5. Suggest a reason as to why CO is poisonous. 2
6. List the important sources of sulphur. 2
7. Why is ICl more reactive than I_2 ? 2
8. PbO_2 is a stronger oxidizing agent than SnO_2 . 2
9. Why does boron form stable electron deficient compounds? 2
10. Answer the following questions: 2
 - i. Which neutral molecule would be isoelectronic with ClO^- ?
 - ii. Of Bi(V) and Sb(V), which may be a stronger oxidizing agent and why?
11. What happens when sulphur dioxide is passed through an aqueous solution of Fe(III) salt? 2
12. Why do Boron halides form addition compound with NH_3 ? 2
13. Name two poisonous gases which can be prepared from chlorine gas. 2
14. Write balanced equations for: $\text{NaH} + \text{B}_2\text{H}_6 \longrightarrow$ 2
15. What happens when NaBH_4 reacts with iodine? 2

16. A certain salt X, gives the following results. 2
- (i) Its aqueous solution is alkaline to litmus.
- (ii) It swells up to a glassy material Y on strong heating.
- (iii) When conc. H_2SO_4 is added to a hot solution of X, white crystal of an acid Z separates out.
17. How is sulphur dioxide is prepared in 2
- i. Laboratory
- ii. Industrially
18. Complete the following reaction: $NH_3 + NaOCl \rightarrow$ 2
19. Complete and balance the following equation $XeF_4 + H_2O$. 2
20. Bi (v) is a stronger oxidizing agent than Bi(III). Why? 2
21. What is dry ice? Why is it so called? 2
22. Write reactions to justify amphoteric nature of aluminium. 2
23. Write the resonance structure of CO_3^{2-} and HCO_3^- 2
24. Complete the chemical equation: $Cu^{2+}(aq) + NH_3(aq) \rightarrow$ 2
25. H_2S is less acidic than H_2Te .(Give reason) 2
26. Explain why Fluorine forms only one oxoacid. HOF. 2
27. Give reasons: Conc. HNO_3 can be transported in aluminium container. 2
28. Chlorine water on standing loses its yellow colour. Why? 2
29. Assign reason for each of the following: 2
- a. Noble gases are mostly chemically inert.
- b. Bismuth is a strong oxidizing agent in pentavalent state.
30. Complete the following chemical equations: 2
- i. $Ca_3P_2(S) + H_2O(l) \rightarrow$
- ii. $Cu^{2+}(aq) + NH_3(aq) \rightarrow$
- iii. $F_2(g) + H_2O(l) \rightarrow$
31. Oxygen molecule has the formula O_2 while sulphur is S_8 .(Give reason) 3
32. Complete and balance- 3
- i. $2F_2(g) + 2H_2O(l) \rightarrow$
- ii. $4NaCl + MnO_2 + 4H_2SO_4 \rightarrow$



33. Justify the placement of O, S, Se, Te and Po in the same group of the periodic table in terms of electronic configuration, oxidation state and hydride formation. **3**
34. Give the resonating structures of NO_2 and N_2O_5 . **3**
35. Account for the following: **3**
- Thermal stability of water is much higher than that of H_2S .
 - White Phosphorus is more reactive than red Phosphorus.