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CHEMICAL BONDING & REDOX REACTIONS

1. Compare the dipole moment of NH_3 & NF_3 . Explain it?
2. Which out of H_2O & H_2S possess higher Bond angle & Why .
3. Give LCAO treatment for M.O.T.
4. Arrange followings in the order of stability and magnetism . Also Explain it -
 O_2 , Peroxide ion (O_2^{-2}) , Super oxide ion (O_2^{-1}) , O_2^+
5. Explain the structure of Acetylene.
6. How PCl_5 undergo dissociation. Explain?
7. What is meant by Hydrogen Bonding? Why ice floats on water?
8. Explain structure of SF_4 . Why one pair occupy Equatorial position & not axial?
9. Predict any change in hybridization as we move from -
 $\text{NH}_3 + \text{BF}_3 \rightarrow [\text{NH}_3 \rightarrow \text{BF}_3]$
- 10 . Why SF_6 is less reactive ?
11. Why Density of Ice is maximum at 4°C ?
12. Define Oxidation and reduction in terms of Oxidation number?
13. What are disproportionating agent? Which out of H_2SO_4 & H_2SO_3 act as disproportionating agent & why ?
14. What is salt bridge? write advantages of salt bridge.
15. Find Oxidation number of underlined species in following -
(a) $\text{K}_4[\underline{\text{Fe}}(\text{CN})_6]$ (b) $\underline{\text{Cr}}\text{O}_5$ (c) $\underline{\text{C}}_6\text{H}_{12}\text{O}_6$

16. Predict the oxidizing & reducing nature of following -
 HNO_2 , H_2S , H_2SO_4
17. Calculate e.m.f of the cell- $\text{Cr}|\text{Cr}^{3+} (0.1\text{M})||\text{Fe}^{2+} (0.01\text{M})|\text{Fe}$,
Given : $E^\circ_{\text{Cr}^{2+}/\text{Cr}} = -0.75\text{ V}$; $E^\circ_{\text{Fe}^{2+}/\text{Fe}} = -0.45\text{ V}$.
18. Write a short Note On S.H.E?
19. Which of the following is possible to store -
(a) ZnSO_4 in Cu vessel .
(b) AgNO_3 in Zn vessel.
20. Balance following redox reaction -
(a) $\text{Sn} + \text{NO}_3^- \rightarrow \text{Sn}^{2+} + \text{NH}_4^+$ acidic
(b) $\text{Fe}(\text{OH})_2 + \text{H}_2\text{O}_2 \rightarrow \text{Fe}(\text{OH})_3 + \text{H}_2\text{O}$ basic
-

Send your answer sheets by Post on following address

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