

CLASS XI  
2nd weekly

{ FM = 50  
TIME = 1 1/2 hrs

Section A

Q1 Write down the hybridized structure of the following compound  
(a)  $C_2H_2$  (b)  $XeF_4$  (c)  $SF_6$  (d)  $H_2O$  (e)  $NH_3$  (10)

Q2 (a) State and explain M.O.T (3)

(b) prove that  $O_2$  is a paramagnetic substance (2)

Q3 (a) State and explain metallic bonding (2)

(b) why  $H_2O$  is a liquid but  $H_2S$  is a gas (2)

(c) Alkali metals when dissolved in liquid  $NH_3$  becomes blue in color and also become good conductor. (2)

(d)  $Li^+$  is the largest cation in the periodic table in aqueous medium (2)

(e) write down the Lewis dot structure of  $H_2SO_4$  and  $HNO_3$  (2)

Section B

(1) (a) Express 20V of  $H_2O_2$  in terms of Normality and grams/litre (2)

(b) Give the chemical reactions of  $H_2O_2$  with the following (2)

(1)  $H_2O_2 + S \rightarrow$  (2)

(2)  $FeSO_4 + H_2O_2 + H_2SO_4 \rightarrow$  (2)

(3)  $KMnO_4 + H_2SO_4 + H_2O_2 \rightarrow K_2SO_4 + MnSO_4 + H_2O + CO_2$  (2)

(4)  $H_2O_2 + KI + H_2SO_4 \rightarrow$  (2)

(5)  $PbSO_4 + H_2O_2 \rightarrow PbO_2 + H_2O$  (2)

(c) Give reasons for the following

(1) Anhydrous  $BaO_2$  is not used for the preparation of  $H_2O_2$  (2)

(2)  $H_2O_2$  solution can not be concentrated by heating (2)

- (c) Water is considered as a universal solvent (2)
- (d) Explain what is temporary and permanent hardness of water. Give the cause and also give one method each to remove the above type of hardness [only reactions needed] (2)

(e) Solve the following conversion

- (a) Ethane to glyoxal (1)
- (b) Acetylene to isopropyl alcohol (1)
- (c) Ethene to propene (1)
- (d) Ethane to Benzene (1)
- (e) Ethane to methane (1)