

# DPP

DAILY PRACTICE PROBLEMS

CLASS : XII<sup>th</sup>  
DATE :

**SOLUTION**

SUBJECT : CHEMISTRY  
DPP NO. : 3

## Topic :-HYDROGEN

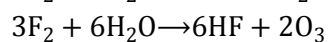
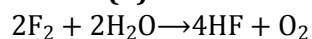
1 (a)

Colloidal Pd has larger surface area.

2 (c)

It is a fact.

3 (d)



4 (b)

The hardness of water sample containing 0.02 mole of  $MgSO_4$  dissolved in 1 L of water.

Number of moles = mass/molecular mass

$$0.002 = \text{mass}/120$$

$$\text{mass} = 0.24 \text{ g}$$

0.24 g mass of  $MgSO_4$  in 1 L of water.

$\therefore 10^3$  g of  $H_2O$  contains = 0.24 g of  $MgSO_4$

$$\therefore 10^6 \text{ g of } H_2O \text{ contains} = \frac{0.24 \times 10^6}{10^3} \text{ g of } MgSO_4$$

$$= 0.24 \times 10^3 \text{ g} = 240 \text{ g of } MgSO_4$$

$10^6$  g of water contains = 240 g of  $MgSO_4$

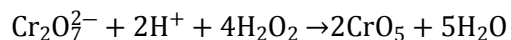
$$120 \text{ g } MgSO_4 \equiv 100 \text{ g of } CaCO_3$$

$$240 \text{ g of } MgSO_4 = \frac{100 \times 240}{120} = 200 \text{ g of } CaCO_3$$

Hence, hardness of  $H_2O$  = 200 ppm.

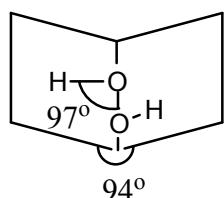
6 (c)

H<sub>2</sub>O<sub>2</sub> oxidises the acidified potassium dichromate solution into blue peroxide of chromium, CrO<sub>5</sub>.



7 (b)

H<sub>2</sub>O<sub>2</sub> is pale blue liquid, it can be oxidised by ozone. H<sub>2</sub>O<sub>2</sub> acts as both oxidising and reducing agent. The value of dipole moment of H<sub>2</sub>O<sub>2</sub> is 2.1 D which suggests it cannot be planar. In fact it has open book like structure.



The two O- H bonds lie in different planes

9 (d)

It forms calcium and magnesium complex with EDTA salt

10 (a)

Ordinary hydrogen mainly contains Protium ( ${}_1\text{H}^1$ ).

12 (c)

ZnH<sub>2</sub> is an example of interstitial hydride while NH<sub>3</sub>, CH<sub>4</sub> and H<sub>2</sub>O are the examples of covalent hydride.

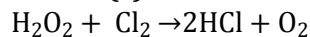
13 (b)

It is a fact.

14 (d)

Polyphosphates like sodium hexametaphosphates, sodium tripolyphosphate or STPP) form soluble complexes with Ca<sup>2+</sup>, Mg<sup>2+</sup> present in hard water

16 (c)



HCl is formed by the reduction of chlorine by H<sub>2</sub>O<sub>2</sub>, hence pH further decreases.

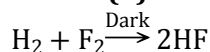
17 (b)

It is a fact.

18 (c)

H<sub>2</sub> is diatomic and forms H<sup>-</sup> and H<sup>+</sup> ions.

19 (b)



20 (d)

Hardness is expressed in g of CaCO<sub>3</sub> present in 10<sup>6</sup> g of H<sub>2</sub>O.

**ANSWER-KEY**

Q.	1	2	3	4	5	6	7	8	9	10
A.	A	C	D	B	D	C	B	B	D	A
Q.	11	12	13	14	15	16	17	18	19	20
A.	A	C	B	D	D	C	B	C	B	D

PE