HYDROGEN

1.The degree of hardness of water is usually expreesed in terms of [AMU 2010]

1) ppm weight of $MgSO_4$

2)g/L of $CaCO_3$ and $MgCO_3$ present

3) ppm weight of $CaCO_3$ irrespective of whether it is actually present

4)ppm of $CaCO_3$ actually present in water

2.Which of the following statements is incorrect ? (M-2010)

1) H_2O_2 has weak acidic property

2) H_2O_2 has weak basic property

3) H_2O_2 can act as oxidising agent

4) H_2O_2 can act as a reducing agent

3. The orange coloured compound formed when H_2O_2 is added to TiO_2 solution acidified with conc. H_2SO_4 is (E-2010)

1) Ti_2O_3 2) $H_2Ti_2O_8$ 3) H_2TiO_3 4) H_2TiO_4

4. permanent hardness of water is due to the presence of

[PMT2011]

1) bicarbonates of sodium and potassium

2) chlorides and sulphates of sodium and potassium

3) bicarbonates of Calcium and magnesium

4) chlorides and sulphates of Calcium and magnesium

5.The value of ..... is less for D_2O compared to that of H_2O. (M - 2005)

1) density ($g.ml^{-1}$)at 20^0C 2) boiling point

3) dielectric constant at 20^0C 4) latent heat of vapourisation

6. If 11.1 mg of $CaCl_2$ and 12mg of $MgSO_4$ are present in 2 litres of water, what is its hardness (in grams of $CaCO_3$/ppm)?

(M - 2008)

1) 5 2) 10 3) 15 4) 20

7.Electrolysis of X gives Y at anode. Vacuum distillation of Y gives H_2O_2. The number of peroxy (O –O) bonds present in X and Y respectively are :

(E -2006)

1) 1,1 2) 1,2 3) 0,1 4) 0, 0

8.The reaction of $H_2O_2$with X does not liberate gaseous product. Which of the following is X ?

(M - 2006)

1) PbO_2 2) $KMnO_4/H^+$ 3) PbS 4) Cl_2

9. Which of the following is not correct ? **(M - 2006)**

1) Temporary hardness of water is due to the presence of bicarbonates of calcium and magnesium in it

2) Permutit is an artificial zeolite

3) H_2O_2 acts as an oxidizing agent in the following reaction:

$Cl_2 + H_2O_2 \rightarrow O_2 + 2HCl$

4) H_2O_2 is used as bleaching agent for delicate textiles

10. Which one of the following reactions represents the oxidizing property of H_2O_2?

(E - 2008)

1) $2KMnO_4 + 3H_2SO_4 + 5H_2O_2 \rightarrow K_2SO_4\ 2MnSO_4 + 8H_2O + 5O_2$

2) $2K_3[Fe(CN)_6] + 2KOH + H_2O_2 \rightarrow 2K_4[Fe(CN)_6] + 2H_2O + O_2$

3) $PbO_2 + H_2O_2 \rightarrow PbO + H_2O + O_2$

4) $2KI + H_2SO_4 + H_2O_2 \rightarrow K_2SO_4 + I_2 + 2H_2O$

11. The pH of a solution of H_2O_2 is 6.0. Some chlorine gas is bubbled into this solution. Which of the following is correct?

(E- 2005)

1) The pH of resultant solution becomes 8.0

2) Hydrogen gas is liberated

3) The P^H of resultant solution become less than 6.0 and oxygen gas is liberated

4) Cl_2O is formed in the resultant solution.

12. The formula of exhausted permutit is : **(M - 2004)**

1) $CaAl_2Si_2O_8xH_2O$ 2) $Na_2Al_2Si_2O_8.xH_2O$ 3) $CaB_2Si_2O_8.xH_2O$ 4) $K_2Al_2Si_2O_8.xH_2O$

13. 15 volume sample of H_2O_2 solution is equivalent to **[BHU2009]**

1) 5.3N **2) 1.77 N** **3)2.68N** **4)7.5N**

14.Which of the following compound is a peroxide? **[AIPMT2010]**

1) NO_2 **2)KO_2** **3) BaO_2** **4)MnO_2**

15. The isotope of hydrogen which is radioactive is **[JIPMER2003]**

1) para hydrogen **2) tritium** **3) nascent hydrogen** **4)deuterium**

16. The volume strength of 1.5N H_2O_2 solution is **[BHU2004]**

1) 8.4 litre **2) 2.2 litre** **3) 5.5 litre** **4)3.9 litre**

17. Match the following : (M - 2007)

Set - I	**Set - II**
(A) 10 Vol H_2O_2	(1) perhydrol
(B) 20 Vol H_2O_2	(2) 5.358 N
(C) 30 Vol H_2O_2	(3) 1.785 M
(D) 100 Vol H_2O_2	(4) 3.03%

1) A - 4, B - 3, C - 2, D - 1 2) A - 1, B - 2, C - 3, D - 4

3) A - 1, B - 3, C - 2, D - 4 **4) A - 4, B - 2, C - 3, D – 1**

18. For the decolourisation of one mole of $KMnO_4$, the number of moles of H_2O_2 required is [AIIMS2004]

1) 3.5 Mole **2) 1.5 Mole** **3) 2.5 Mole** **4) 5 Mole**

19. Hardness of water is due to presence of salts of [AMU2007]

1) Na^+ and K^+ **2) Ca^{+2} and Mg^{+2}** **3) Ca^{+2} and K^+** **4) Ca^{+2} and Na^+**

20. Which of the following is not correct regarding electrolytic preparation of H_2O_2? [CPMT2008]

1) Lead is used as cathode

2) 50% H_2SO_4 is used

3) Hydrogen is liberated at anode

4) Sulphuric acid undergoes oxidation

Key

1) 3	**2)2**	**3)4**	**4) 4**	**5)3**	**6)2**	**7)3**	**8)3**	**9) 3**	**10)4**
11) 3	**12)1**	**13)3**	**14)3**	**15)2**	**16)1**	**17)1**	**18)3**	**19) 2**	**20)3**