

CLASS : XII<sup>th</sup>

DATE :

SUBJECT : CHEMISTRY

DPP NO. :3

## Topic :-HYDROGEN

- Which can adsorb large volumes of hydrogen gas?
  - Colloidal solution of palladium
  - Finely divided nickel
  - Colloidal ferric hydroxide
  - Finely divided platinum
- In the hydrogen peroxide molecule:
  - Two hydrogen atoms are connected to one of the oxygen
  - All the four atoms are in the same plane
  - The four atoms are arranged in a non-linear and non-planar manner
  - O—H bonds are polar but molecule is non-polar
- Fluorine reacts with water to form:
  - Fluorine water
  - Oxygen
  - Ozone
  - Oxygen, ozone
- The hardness of water sample containing 0.002 mole of magnesium sulphate dissolved in a litre of water is expressed as
  - 20ppm
  - 200ppm
  - 2000ppm
  - 120ppm
- Adsorbed hydrogen by palladium is known as
  - Nascent
  - Atomic
  - Heavy
  - Occluded
- When hydrogen peroxide is added to acidified potassium dichromate, a blue colour is produced due to formation of
  - CrO<sub>3</sub>
  - Cr<sub>2</sub>O<sub>3</sub>
  - CrO<sub>5</sub>
  - CrO<sub>4</sub><sup>2-</sup>
- Which is false about H<sub>2</sub>O<sub>2</sub>?
  - Act as both oxidising and reducing agent
  - Two OH bonds lie in the same plane
  - Pale blue liquid
  - Can be oxidised by ozone
- The reaction of H<sub>2</sub>S + H<sub>2</sub>O<sub>2</sub> → S + 2H<sub>2</sub>O manifests
  - Reducing action of H<sub>2</sub>O<sub>2</sub>
  - Oxidising nature of H<sub>2</sub>O<sub>2</sub>
  - Alkaline nature of H<sub>2</sub>O<sub>2</sub>
  - Acidic nature of H<sub>2</sub>O<sub>2</sub>

9. The reagent commonly used to determine hardness of water titrimetrically is
- Oxalic acid
  - Sodium thiosulphate
  - Sodium citrate
  - Disodium salt of EDTA
10. Ordinary hydrogen has preponderance of:
- Hydrogen atoms
  - Deuterium atoms
  - Tritium atoms
  - The above three are in equal proportions
11. Benzene is oxidized by  $\text{H}_2\text{O}_2$  in presence of  $\text{FeSO}_4$  to :
- Phenol
  - Cyclohexane
  - Benzaldehyde
  - Benzoic acid
12. Which of the following is an example of interstitial hydride?
- $\text{NH}_3$
  - $\text{CH}_4$
  - $\text{ZnH}_2$
  - $\text{H}_2\text{O}$
13. If water is boiled for sometime it becomes free from:
- Permanent hardness
  - Temporary hardness
  - Suspended matter
  - Temporary hardness and dissolved gases
14. Polyphosphates are used as water softening agents because they
- Form soluble complexes with anionic species
  - Precipitate anionic species
  - Precipitate cationic species
  - Form soluble complexes with cationic species
15. When two ice cubes are pressed over each other they unite to form one cube. Which of the following forces are responsible to hold them together?
- Ionic interaction
  - Van der Waals' forces
  - Covalent interaction
  - Hydrogen bond formation
16. The pH of a solution of  $\text{H}_2\text{O}_2$  is 6.0. Some chloride gas is bubbled into this solution. Which of the following is correct?
- The pH of resultant solution becomes 8.0
  - Hydrogen gas is liberated from resultant solution
  - The pH of resultant solution becomes less than 6.0 and oxygen gas is liberated
  - $\text{Cl}_2\text{O}$  is formed in the resultant solution

17. Permanent hardness of water can be removed by adding Calgon( $\text{NaPO}_3$ )<sub>n</sub>. This is an example of:
- a) Adsorption                      b) Exchange of ion                      c) Precipitation                      d) None of these
18. Hydrogen molecules are:
- a) Monoatomic and form  $X_2^{2-}$  ions  
b) Diatomic and form  $X_2^{2-}$  ions  
c) Diatomic and form  $X^-$  ions  
d) Monoatomic and form  $X^-$  ions
19. Hydrogen reacts with ..... even in the dark.
- a)  $\text{Br}_2$                       b)  $\text{F}_2$                       c)  $\text{I}_2$                       d)  $\text{Cl}_2$
20. 1000 g aqueous solution of  $\text{CaCO}_3$  contains 10 g of calcium carbonate. Hardness of the solution is:
- a) 10 ppm                      b) 100 ppm                      c) 1000 ppm                      d) 10000 ppm

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