

CLASS TEST – 5

Time: 30 minutes

Marks :20

- What is the value of K_w at 25°C?
 - 14
 - 13
 - 12
 - 11
- For sulphuric acid, pH is
 - >7
 - <7
 - =7
 - None of these
- Predict the correct acidity order
 - $\text{HF} < \text{HCl} < \text{HBr} < \text{HI}$
 - $\text{HF} < \text{HCl} < \text{HI} < \text{HBr}$
 - $\text{HI} < \text{HBr} < \text{HCl} < \text{HF}$
 - $\text{HI} < \text{HBr} < \text{HF} < \text{HCl}$
- What is the conjugate base of HClO_4 ?
 - HClO_4
 - ClO_3
 - ClO_4^-
 - ClO_4^{2-}
- For a solution $[\text{H}^+] = 3.8 \times 10^{-3} \text{ M}$, what is the pH? [$\log(3.8) = 0.58$]
 - 2.41
 - 2.42
 - 2.40
 - 2.39
- Write the relation between K_w , K_a and K_b for a conjugate acid-base pair.
- Write the Henderson equation for an acidic buffer.
- What is the condition of precipitation of a substance from its solution.
- The solubility of PbCl_2 at 25°C is $6.3 \times 10^{-3} \text{ M}$. The solubility product of PbCl_2 is ____.
- The solubility of A_2X_3 is $x \text{ M}$. Calculate the solubility product.
- Which type of redox reaction is this?
$$\text{Cl}_2 + 2\text{OH}^- \rightarrow \text{ClO}^- + \text{Cl}^- + \text{H}_2\text{O}$$
- Calculate the oxidation number of V in VO_3^{2-} .
- Oxidation number of P in $\text{Ba}(\text{H}_2\text{PO}_2)_2$ is _____.
- The oxidation state of S in $\text{Na}_2\text{S}_4\text{O}_6$ is _____.
- In $\text{N}_2 + 3\text{H}_2\text{O} \rightarrow \text{NH}_4^+ + \text{NO}_2^-$, N is
 - Oxidised
 - Reduced
 - Both a & b
 - None of these

16. Justify $2\text{Cu}_2\text{O} + \text{Cu}_2\text{S} \rightarrow \text{SO}_2 + 6\text{Cu}$ is a redox reaction.(2)

17. Balance the redox reaction in acidic medium (3)

