

1) A weak monobasic acid is 1% dissociated in an aq. Solution. pH of the solution = 3. its molarity is

- 1) 1M 2) 0.1M 3) 0.01M 4) 0.001M

2) Which of the following gives an acidic solution in water

- 1) NH_4Cl 2) NH_4NO_3 3) $(NH_4)_2SO_4$ 4) all the above

3) Number of H^+ ions present in 1 mole of water at $25^\circ C$

- 1) 10^{-7} 2) 10^7 3) 6.022×10^{23} 4) 6.022×10^{16}

4) $[H^+]$ of a solution increases by 10 times, then its pH

- 1) Increases by 1 unit
- 2) Decreases by 1 unit
- 3) Increases by 0.1 unit
- 4) Decreases by 0.1 unit

5) Equal volumes of 2 solutions of $pH=3$ and $pH = 5$ are mixed. pH of the resulting solution is

- 1) 4
- 2) 4.5
- 3) 5
- 6) 3.3

6) pK_a of two acids of equal molarity are 4 and 5. The strengths of the acids are in the ratio

- 1) 4:5
- 2) 10:1
- 3) 10:3.2
- 4) 1:10

7) Which of the following solutions change its pH easily when few drops of dil. HCl is added

- 1) Sodium phosphate + phosphoric acid
- 2) Sodium carbonate + carbonic acid
- 3) Sodium chloride + hydrochloric acid
- 4) Sodium citrate + citric acid

8) In an aqueous solution $[x^-]=[Hx]$ k_b of $x^- = 10^{12}$. What is the pH of the buffer solutions

- 1) 12 2) 2 3) 13 4) 1

9) The degree of dissociation of acetic acid is affected by

- 1) Dilution
2) Adding HCl
3) Adding NaOH
4) All the above

10) To a saturated solution of AgCl little HCl is added. Then

- 1) Solubility of AgCl decreases
2) Solubility of AgCl increases
3) K_s of AgCl increases
4) Solubility of AgCl does not change

11) Solubility of AgCl is maximum in

- 1) 0.1M HCl
- 2) 0.1M NaCl
- 3) Water
- 4) 0.1M NH_4OH

12) K_s of a sparingly soluble salt AB is 1×10^{-10} .

In a solution $[A^+]$ is 10^{-4} M. AB will precipitate when $[B^-]$ is

- 1) 10^{-3} M 2) 10^{-4} M 3) 10^{-5} M 4) all the above.

13) To a solution containing equal concentration of Cl^- , Br^- , I^- . Dilute AgNO_3 solution is added.

Which is precipitated first.

- 1) AgCl 2) AgBr 3) AgI 4) all are precipitated together.

14) K_a for a weak acid is 10^{-5} . pK_b for its conjugate base is

- 1) 10^{-9} 2) 5 3) 9 4) 7

15) In a solution containing mixture of NH_4Cl and NH_4OH , the ratio $[NH_4Cl]:[NH_4OH]$ decreases by 10 times, then the pH

- 1) Increases by 1 unit 2) Increases by 10 unit
3) Decreases by 1 unit 4) Decreases by 10 unit.

16) pH of a sodium hydroxide solution is 10.

Then mass of NaOH/dm³ is

1) $2 \times 10^{-3} g$ 2) $4 \times 10^{-3} g$ 3) $10^{-10} g$

4) $4 \times 10^{-9} g$

17) pH of 0.5 N H₂SO₄ is

1) 0 2) 0.3010 3) 1 4) 0.5

18) Difference between 0.1 N NaOH and 0.1 NH₄OH is

1) One is a conductor of electricity and other is not

2) One is corrosion and other is not

3) One contains undissociated molecules and other does not

4) One reacts with HCl and other does not

19) When more and more water is added to the solution of a weak electrolyte, the value of the degree of dissociation approaches to..

- 1)0 2) 1 3)100 4) ∞

20) In the electrolysis of the fused NaCl, the product obtained at the cathode is

- 1) O_2 2) Cl_2 3) H_2 4) none of the above

21) The solubility of a salt AB_2 is $1.0 \times 10^{-5} \text{ mol dm}^{-3}$. The value of solubility product is

- 1) 4×10^{-15} 2) 10^{-10} 3) 10^{-15} 4) 4×10^{-10}

22) ECE of a divalent metal is 2×10^{-4} . Atomic mass of the metal is

- 1)19.3 2)38.6 3)77.2 4)9.65

23) ρH of a NaoH solution is 10. 10 dm^3 of this solution contains.

- 1) 0.1g NaoH
- 2) 4g of NaoH
- 3) 0.4g of NaoH
- 4) 0.04g NaoH

24) Common salt is added to a saturated solution of soap. Soap is precipitated. This is because of

- 1) Common ion effect
- 2) Peptisation
- 3) Coagulation
- 4) None of these.

25) A buffer solution containing equal volumes 0.02M NH_4OH and 0.2M NH_4cl has a $\rho H=x$ ρk_b of $\text{NH}_4\text{OH}=5$, the value of x is

1) 4 2) 6 3) 8 4) 10