Common ion effect, Isohydric solutions, Solubility product, Ionic product of water and Salt hydrolysis

21. What is the pH value of $\frac{N}{1000}KOH$ solution

(a) 10^{-11} (b) 3

(c) 2 (d) 11

22. Mohr's salt is a

(a) Normal salt

(b) Acid salt

(c) Basic salt

(d) Double salt

23. Aqueous solution of sodium acetate is

(a) Neutral

(b) Weakly acidic

(c) Strongly acidic

(d) Alkaline

24. Which is the correct alternate for hydrolysis constant of NH_4CN

(a) $\sqrt{\frac{K_w}{K_a}}$ (b) $\frac{K_w}{K_a \times K_b}$

(c) $\sqrt{\frac{K_b}{c}}$ (d) $\frac{K_a}{K_b}$

25. Which of the following salts undergoes hydrolysis

(a) CH_3COONa (b) KNO_3

(c) $NaCl$ (d) K_2SO_4

26. What will happen if CCl_4 is treated with $AgNO_3$

(a) A white ppt. of $AgCl$ will form

(b) NO_2 will be evolved

(c) CCl_4 will dissolve in $AgNO_3$

(d) Nothing will happen

27. The correct representation for solubility product of $SnS_2$is

(a) $3 \times 10^{-2}M$

(b) $[Sn^{2+}][S^{2-}]^2$

(c) $[Sn^{2+}][2S^{2-}]$

(d) $[Sn^{4+}][2S^{2-}]^2$

28. A precipitate of calcium oxalate will not dissolve in

(a) HCl (b) HNO_3

(c) Aquaregia (d) CH_3COOH

29. Baking soda is

(a) Basic salt

(b) Acidic salt

(c) Complex salt

(d) Double salt

30. Which one of the following substances will be a mixed salt

(a) $NaHCO_3$

(b) $Ca(OCl)Cl$

(c) $K_2SO_4Al_2(SO_4)_3.24H_2O$

(d) $Mg(OH)Br$

31. Solubility product of $BaCl_2$ is 4×10^{-9}. Its solubility in moles/litre would be
(a) 1×10^{-3} (b) 1×10^{-9}
(c) 4×10^{-27} (d) 1×10^{-27}

32. Which hydroxide will have lowest value of solubility product at normal temperature (25^oC)
(a) $Mg(OH)_2$ (b) $Ca(OH)_2$
(c) $Ba(OH)_2$ (d) $Be(OH)_2$

33. Which will not be hydrolysed
(a) Potassium nitrate
(b) Potassium cyanide
(c) Potassium succinate
(d) Potassium carbonate

34. Which pair will show common ion effect
(a) $BaCl_2 + Ba(NO_3)_2$
(b) $NaCl + HCl$
(c) $NH_4OH + NH_4Cl$ (d) $AgCN + KCN$

35. Which is least soluble in water
(a) $AgCl$ (b) AgF
(c) AgI (d) Ag_2S

36. A white salt is readily soluble in water and gives a colourless solution with a pH of about 9. The salt would be
(a) NH_4NO_3
(b) CH_3COONa
(c) CH_3COONH_4
(d) $CaCO_3$

37. If acetic acid mixed with sodium acetate, then H^+ ion concentration will be
(a) Increased
(b) Decreased
(c) Remains unchanged
(d) pH decreased

38. Solubility of $AgCl$ will be minimum in
(a) $0.001M AgNO_3$
(b) Pure water
(c) $0.30M$
(d) $0.01M NaCl$

39. In absence of formation of complex ions by the addition of a common ion, the solubility of a given salt is
(a) Increased
(b) Decreased
(c) Unaffected
(d) First increased and then decreased

40. At 298 *K*, the solubility product of $PbCl_2$ is 1.0×10^{-6}. What will be the solubility of $PbCl_2$ in moles/litre
(a) 6.3×10^{-3}
(b) 1.0×10^{-3}
(c) 3.0×10^{-3}
(d) 4.6×10^{-14}

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