QUIZ
X CLASS

ACIDS, BASES AND SALTS

FIITJEE
KKP / MYP CENTRE

1. CH_3COONa is salt of:
   (A) Weak acid and strong base (B) Strong acid and weak base
   (C) Weak acid and weak base (D) Strong acid and strong base

2. Give the conjugate acids of the given bases:
   (i) HCO_3^- (ii) $S_2O_8^{2-}$ (iii) HPO_4^{-2} (iv) CH_3COO^-
   (v) Br^- (vi) HSO_4^- (vii) NH_2^- (viii) OH^-
   (ix) H_2O

3. Give the conjugate base of the given acids:
   (i) H_3PO_4 (ii) HS^- (iii) NH_4^+ (iv) H_3O^+
   (v) $HClO_4$ (vi) HSO_4^- (vii) HNO_3 (viii) H_2CO_3
   (ix) H_2O (x) $H_2PO_4^-$

4. Which of the following is not a Lewis base?
   (A) Cl^- (B) Ag^+ (C) HC≡CH (D) H_2O

5. Which of the following is not a conjugate acid - base pair?
   (A) NH_3, NH_2^- (B) H_2O, OH^- (C) H_2SO_4, SO_4^{-2} (D) CH_3COOH, CH_3COO^-

6. pH of 10^{-8} M HCl is
   (A) 8 (B) Near to 7 (C) less than 7 (D) equal to 7

7. pOH of 0.01 M HCl is
   (A) 12 (B) 2 (C) 10^{-2} (D) 10^{-12}

8. Nature of Na_2CO_3 solution is
   (A) Basic (B) Acidic (C) Neutral (D) Amphoteric

9. Which of the following statement is wrong
   (A) $[H^+] = 10^{-7}$ moles / lit at 25°C (B) $\left[OH^-\right] = 10^{-7}$ moles / lit at 25°C
   (C) $K_w = 10^{-14}$ moles^2/lit^2 at 25°C (D $K_w < 10^{-14}$ moles^2/lit^2 at 25°C

10. Basicity of H_3PO_3 is
    (A) 1 (B) 2 (C) 3 (D) Both B & C

11. pH of 1M NaOH is
    (A) 14 (B) 13 (C) 0 (D) 1

12. Which of the following pH values corresponds to that of basic solution?
    (A) 3 (B) 5 (C) 7 (D) 9

13. Which of the following cannot form more than one salt?
    (A) CH_3COOH (B) HOOC-COOH (C) H_3PO_4 (D) H_3PO_3

14. Which of the following statements is wrong?
(A) A weak acid dissociates incompletely.
(B) The solution of a salt of a weak acid and a strong base is alkaline
(C) The neutralisation of a weak acid by a strong base gives a solution of pH = 7.
(D) A monobasic acid cannot form an acid salt.

15. Which of the following statements is/are correct?
(i) Alkalis are bases soluble in water.
(ii) Dibasic acids are stronger than monobasic acids.
(iii) A strong acid does not lose its proton to a base easily.
(A) (i) only (B) (i) and (iii) (C) (i) and (ii) (D) (ii) and (iii)

16. The colour of methyl orange indicator in acidic medium is
(A) yellow (B) green (C) orange (D) red

17. The colour of phenolphthalein indicator in basic solution is
(A) yellow (B) green (C) pink (D) orange

18. The value of K_w changes with changing
(A) $[H^+]$ (B) $[OH^-]$ (C) Temperature (D) Pressure

19. Which among the following is amphoteric oxide?
(A) ZnO (B) Na_2O (C) SO_2 (D) B_2O_3

20. The pH of 0.005 molar sulphuric acid solution is
(A) 2.0 (B) 5.0 (C) 10.0 (D) 1.0

21. The compound whose aqueous solution would have the lowest pH is
(A) NaOH (B) NH_4Cl (C) Na_2CO_3 (D) NaCl

22. Arrhenius acid among the following is
(A) NH_3 (B) CO_2 (C) BF_3 (D) HCl

23. Arrhenius acid that has the lesser Ka value
(A) $HClO_4$ (B) HNO_3 (C) H_2SO_4 (D) CH_3COOH

24. The strongest acid among the following weak acids is
(A) H_2S (B) HCN (C) HF (D) CH_3COOH

25. Arrhenius theory fails to explain the acidic nature of
(A) HCl (B) CH_3COOH (C) H_2S (D) SO_3