CHAPTER 10

ACIDS, BASES AND SALTS

MULTIPLE CHOICE QUESTIONS

1. **Nitric acid was prepared by**
   (a) Bu Ali Sina (b) Jabir Bin Hayan (c) Lavioser (d) Humphrey
2. **The first acid known to man was:**
   (a) hydrochloric acid (b) sulphuric acid (c) nitric acid (d) acetic acid
3. **The word acid is derived from**
   (a) acidic (b) acidus (c) acetic (d) acetate
4. **Humphrey Davy proved the presence of _____ as the main constituents of all acids**
   (a) nitrogen (b) oxygen (c) hydrogen (d) chlorine
5. **Formula of phosphoric acid is:**
   (a) H_2PO_3 (b) H_4PO_3 (c) HPO_4 (d) H_3PO_4
6. **$Al(OH)_3$ is:**
   (a) acid (b) base (c) salt (d) non-metallic oxide
7. **Which is amphoteric:**
   (a) HCl (b) NH_3 (c) NaOH (d) H_2O
8. **The product of any Lewis acid base reaction is a single specie:**
   (a) salt (b) adduct
   (c) salt $+H_2O$ (d) conjugate acid-base pair
9. **In a resaction between ammonia & borontrifloride , BF_3 is**
   (a) acid (b) base (c) conjugate base (d) adduct
10. **These can act as Lewis acids**
    (a) anions (b) radicals (c) cations (d) molecule
11. **Bronsted lowery acid**
    (a) gives H^+ (b) electron pair acceptor
    (c) donates OH^- (d) donates H^+
12. **All bronsted bases are**
    (a) arhenius bases (b) Lewis acids
    (c) Lewis base (d) bronsted acids
13. **The final product of arhenius concept is**
    (a) salt $+H_2O$ (b) adduct
    (c) conjugate acid base pair (d) salt only
14. **Neutralization is reaction of**
    (a) acid with metals (b) acids with sulphides
    (c) bases with acids (d) none of them
15. **Acid used for food preservation**
    (a) nitric acid (b) benzoic acid (c) acetic acid (d) Both b and c

16. **Maleic acid is found from**
(a) apples (b) grapes (c) sour milk (d) fats

17. **Acid reacts with metal sulphides to liberate**
(a) hydrogen gas (b) carbon dioxide (c) ammonia gas (d) hydrogen sulphide gas

18. **It is used to treat bee's sting**
(a) $Mg(OH)_2$ (b) $Ca(OH)_2$ (c) NaOH (d) KOH

19. **It is found in stings of bee's and ants:**
(a) lactic acid (b) Maleic acid (c) butyric acid (d) formic acid

20. **It is used to cure sting of wasps:**
(a) acetic acid (b) benzoic acid (c) nitric acid (d) sulphuric acid

21. **Bases react with acid to form:**
(a) salt only (b) salt & water (c) water only (d) None of them

22. **Stomach acidity is also called :**
(a) acidity (b) heart burning (c) hyperacidity (d) hypoacidity

23. **When acids react with carbonates and bicarbonates, which evolves out:**
(a) H_2S (b) CO_3 (c) CO_2 (d) CO

24. **It is used in etching designs on copper plates:**
(a) sulphuric acid (b) acetic acid (c) hydrochloric acid (d) nitric acid

25. **These can act as lewis bases**
(a) cations (b) anions (c) cations & anions (d) radicals

26. **Uric acid is present in**
(a) fats (b) citrus fruits (c) apples (d) urine

27. **In etching process, the glass or mirror is dipped into:**
(a) hydrochloric acid (b) sulphuric acid (c) nitric acid (d) hydrofluoric acid

28. **Concentration of _____ in pure water is the basis for pH scale**
(a) hydrogen ion (b) sodium ion (c) potassium ion (d) hydroxide ion

29. **Water is:**
(a) weak electrolyte (b) strong electrolyte (c) non-electrolyte (d) None of them

30. **Water ionizes slightly into ions is a process called:**
(a) neutralization (b) auto ionization (c) self ionization (d) both b & c

31. **"K_w" is known as:**
(a) equilibrium constant (b) ionic product constant
(c) specific rate constant (d) all of them

32. **The negative logarithm of molar concentration of hydrogen ions is:**
(a) pOH (b) p (c) pH (d) None of them

33. **The range of pH scale is from:**
(a) 10-14 (b) 1-14 (c) 0-14 (d) 14-0

34. **The sum of pH scale and pOH is always :**
(a) 14 at 26°C (b) 14 at 25 °C (c) 13 at 25 °C (d) 7 at 25 °C

35. **A solution of a compound of pH 7 or pOH 7 is considered a:**
(a) basic solution (b) neutral solution (c) acidic solution (d) None of them

36. **Solution of pH less than _____ are acidic.**
(a) 7 (b) 14 (c) 6 (d) 9

37. **Solution of pH more than 7 are:**
(a) acidic (b) neutral (c) basic (d) All of them

38. **pH =_____:**
(a) $-\log[OH^-]$ (b) $-\log[H^+]$ (c) $\log[H^+]$ (d) Both b & c

39. **A solution of pH = 1 has _____ times higher concentration of H^+ than a solution of pH = 2:**
(a) 14 times (b) 100 times (c) 10 times (d) None of them

40. **Low pH value means:**
(a) strong acid (b) weak acid (c) strong basic (d) All of them

41. **pH of a neutral solution is always:**
(a) 14 (b) 0 (c) 7 (d) None of them

42. **High value of pH means:**
(a) strong acid (b) strong base (c) Both a & b (d) neutral

43. **Indicators are :**
(a) inorganic compounds (b) hydrocarbons
(c) organic compounds (d) None of them

44. **Indicators have _____ colour in acidic or basic solution:**
(a) same (b) different (c) light (d) normal

45. **It is a common indicator.**
(a) litmus (b) pH meter (c) pH scale (d) both a & b

46. **Litmus is _____ in acidic solution:**
(a) blue (b) normal (c) red (d) orange

47. **Litmus is _____ in basic solution:**
(a) red (b) blue (c) yellow (d) orange

48. **Phenolphthalein is _____ in acidic solution:**
(a) red (b) blue (c) yellow (d) colorless

49. **Methyl orange is _____ in alkaline solution :**
(a) red (b) blue (c) yellow (d) orange

50. **At which pH methyl orange change color:**
(a) 7 (b) 14 (c) 9 (d) 4

51. **At which pH phenolphthalein change color:**
(a) 7 (b) 4 (c) 9 (d) 0

52. **pH meter consists of:**
(a) pH electrode (b) positive electrode (c) negative electrode (d) None of them

53. **It is much more reliable and accurate method of measuring pH:**
(a) universal indicator (b) pH meter (c) pH scale (d) litmus

54. **A solution HCl is 0.001 M. what is pH value?**
(a) 3 (b) 12 (c) 2 (d) 14

55. **What is pH value of 0.01 M solution of KOH?**
(a) 14 (b) 13 (c) 11 (d) 3

56. **What is pH value of 0.01 M sulphuric acid ?**
(a) 7.1 (b) 1.7 (c) 1.0 (d) 0.3

57. **Ionic product constant depends on :**
(a) temperature (b) concentration (c) both (d) None

58. **Salts are:**
(a) organic compounds (b) inorganic compounds
(c) ionic compounds (d) None of them

59. **A cation is derived from:**
(a) acid (b) base (c) molecule (d) compound

60. **Metallic oxides are:**
(a) bases (b) acids (c) salts (d) organic compounds

61. **A anion is derived from:**
(a) acid (b) base (c) molecule (d) all of them

62. **When Na reacts with HCl the salt produced is:**
(a) NaCl (b) NaOH (c) H_2O (d) NH_3

63. **Sodium carbonate, Sodium sulphate and sodium silicate are used to manufacture:**
(a) paper (b) detergents (c) glass (d) cleaning agents

64. **Heat resistance glass is:**
(a) simple glass (b) Pyrex (c) both a and b (d) None of them

65. **Salts are found in:**
(a) crystalline form (b) amorphic form (c) Both a & b (d) None

66. **Salt have:**
(a) high M.P and low B.P (b) high M.P and B.P
(c) low M.P and low B.P (d) low M.P and high B.P

67. Copper sulphate has water of crystallization:
(a) 5 (b) 2 (c) 6 (d) 24

68. **Calcium sulphide has water of crystallization:**
(a) 5 (b) 2 (c) 6 (d) 24

69. **Salts may be:**
(a) water soluble (b) water insoluble (c) both (d) none

70. **_____ salts are often prepared in water:**
(a) soluble (b) insoluble (c) both (d) none

71. **Reaction of acid and a metal is called _____ reaction:**
(a) partial displacement (b) direct displacement
(c) incomplete displacement (d) all of these