



NATIONAL SCIENCE OLYMPIAD-2015

Model Paper-1

Class: X
 Time: 60 Minutes

Total Marks: 60
 Total No. of Questions = 60 (Each Question Carries-1 Marks)

I. Choose the Correct Answer among the given Options and write it in the given bracket

1. Black coating on silver ware is an example of []
 A. rusting B. reduction C. corrosion D. photochemical reaction
2. A substance 'X' is used for washing clothes: X is []
 A. NaCl B. CaCO₃ C. Na₂CO₃ D. CaOCl₂
3. When NH₄Cl is dissolved in water, the reaction is []
 A. endothermic B. exothermic C. photochemical D. none of these
4. Which of the following is used in the manufacture of cement? []
 A. CaO B. Na₂O C. Ca(OH)₂ D. Calcium carbide
5. Which one of the following is used as explosive? []
 A. potassium chloride B. potassium nitrate
 C. potassium permanganate D. potassium chlorate
6. Which of the following is an endothermic process? []
 A. burning of coal B. burning of Magnesium
 C. decomposition of CaCO₃ D. dissolution of NaOH in water
7. CaCO₃ can be used for []
 A. washing clothes B. white washing C. bleaching D. baking
8. Which of the following involves a chemical change? []
 A. melting of ice B. vaporization of water
 C. boiling of rice D. none of these
9. I⁻ + Br₂ → I₂ + Br⁻ []
 A. I⁻ B. Br₂ C. I₂ D. Br⁻
10. The molecular formula of hydrated sodium carbonate contains []
 A. 1H₂O molecule B. 5H₂O molecules
 C. 8H₂O molecules D. 10H₂O molecules
11. In the exothermic reaction, the heat energy is []
 A. evolved B. absorbed C. both (a) and (b) D. none of these
12. The reaction which involves formation of two or more substances by the breaking of a single substance is called []
 A. displacement reaction B. combination reaction
 C. decomposition reaction D. none of these

- 28. Evaporation is** []
 A. endothermic B. exothermic C. reversible D. nonspontaneous
- 29. When electrolysis of water is carried out, the gases liberated are** []
 A. H₂, Cl₂ B. Cl₂, O₂ C. O₂, H₂ D. O₂, N₂
- 30. The precipitate formed on mixing BaCl₂ & Na₂SO₄ solution is of** []
 A. NaCl B. BaSO₄ C. Na₂SO₄ D. none of these
- 31. The pH values of I, II, III, IV solutions are found to be 3, 7, 8, and 10 respectively. Among the given solutions, which solution has the highest hydrogen ion concentration?** []
 A. I B. II C. III D. IV
- 32. If an unknown solution turns blue litmus red, then the pH of the solution is more likely to be** []
 A. 8 B. 7 C. 12 D. 4
- 33. is used for treating indigestion. Therefore, it is an** []

 A. magnesium hydroxide, antibiotic B. magnesium hydroxide, antacid
 C. potassium nitrate, antacid D. potassium nitrate, antibiotic
- 34. Salts of strong acids and strong bases are generally in nature, and salts of strong acids and weak bases are generally in nature respectively.** []
 A. neutral, basic B. basic, acidic C. neutral, acidic D. acidic, basic
- 35. The colour of neutral litmus solution is** []
 A. red B. blue N C. purple D. yellow
- 36. Which of the following indicators is an olfactory indicator?** []
 A. methyl orange B. vanilla C. litmus D. phenolphthalein
- 37. Which of the following products are produced when sodium hydrogen carbonate reacts with dilute hydrochloric acid?** []
 A. NaCl, CO₂, and H₂ B. Na, CCl₄ and H₂O
 C. NaCl, CO₂ and H₂O D. NaOH, H₂, and CCl₄
- 38. Metallic oxides are in nature.** []
 A. neutral B. acidic C. basic D. amphoteric
- 39. Which acid is produced in our stomach?** []
 A. hydrochloric acid B. sulphuric acid C. nitric acid D. acetic acid
- 40. Which of the following compounds is used in soda-acid fire extinguishers?** []
 A. sodium carbonate B. magnesium carbonate
 C. calcium carbonate D. sodium hydrogen carbonate
- 41. Which of the following natural sources contains oxalic acid?** []
 A. lemon B. turmeric C. tomato D. tamarind
- 42. The acid found in an ant sting is** []
 A. acetic acid B. citric acid C. tartaric acid D. methanoic acid
- 43. To relieve pain caused due to acidity, we can take** []
 A. sour milk B. lemon juice C. orange juice D. milk of magnesia

- 44. The concentration of H⁺ ions in a solution can be measured using** []
 A. a pH paper B. a litmus paper C. methyl orange D. phenolphthalein
- 45. Which of the following solutions does not conduct electricity?** []
 A. NaCl solution B. Ca(OH)₂ solution C. sucrose solution D. HCl solution
- 46. A strong acid, HA reacts with a weak base, BOH to form a salt, AB. What would be the nature of salt AB?** []
 A. basic B. neutral C. weakly basic D. acidic
- 47. Which of the following salts has the minimum pH value?** []
 A. (NH₄)₂SO₄ B. NaHCO₃ C. K₂SO₄ D. NaCl
- 48. Which of the following salts is basic in nature?** []
 A. NH₄NO₃ B. Na₂CO₃ C. Na₂SO₄ D. NaCl
- 49. The chemical formula of washing soda is and its chemical name is** []
 A. CaSO₄ · 1/2 H₂O, calcium sulphate hemihydrate
 B. Na₂CO₃ · 10H₂O, sodium carbonate decahydrate
 C. NaHCO₃, sodium hydrogen carbonate
 D. Na₂CO₃, sodium carbonate
- 50. Which of the following is acidic?** []
 A. ZnO B. Al₂O₃ C. Na₂O D. CO₂
- 51. The gas evolved, when Zn reacts with H₂SO₄ can be used for** []
 A. reduction B. oxidation C. Photosynthesis D. Photography
- 52. A solution of strong base and weak acid will turn** []
 A. blue litmus red B. red litmus blue C. no action D. none of these
- 53. Which acid prevents disease is called scurvy** []
 A. citric acid B. tartaric acid C. oxalic acid D. hydrochloric acid
- 54. On adding water to a solution of pH 5, its pH will** []
 A. remain same B. decreases C. increases D. none of these
- 55. The product formed, when chlorine gas passes through dry slaked lime is:** []
 A. CaOCl₂ B. CaCl₂ C. CaOCl D. CaO
- 56. Which one of the following is not a basic oxide?** []
 A. MgO B. Na₂O C. SiO₂ D. CaO
- 57. Chemical formula for bleaching powder is** []
 A. Na₂CO₃ · N B. AHCO₃ C. CaOCl₂ D. None of these
- 58. The equation between an acid and a base is XOH + HY → XY + H₂O**
Which of the following is the anion part of salt? []
 A. X⁺ B. H⁺ C. Y⁻ D. H⁺
- 59. If a few drop of phenolphthalein indicator are added to tomato juice, then the colour of the juice will turn** []
 A. blue B. pink C. colorless D. none of these

60. If 20 ml of acidic solution A is required to neutralize 10 ml of basic solution B.

How much of the solution B is required to neutralize 15 ml of solution A?

[]

A. 15 ml

B. 30 ml

C. 7.5 ml

D. none of these

Answer Key

1. C 2. C 3. A 4. A 5. B 6. C 7. B 8. C 9. B 10. D 11. A 12. C 13. C 14. D 15. A 16. C 17. B 18. D 19. C 20. B
21. A 22. B 23. C 24. B 25. C 26. A 27. A 28. A 29. C 30. B 31. A 32. D 33. B 34. C 35. C 36. B 37. C 38. C 39. A 40. D
41. C 42. D 43. D 44. A 45. C 46. D 47. A 48. B 49. B 50. D 51. A 52. B 53. A 54. B 55. A 56. C 57. C 58. C 59. C 60. C