

CHEMISTRY SET V

Subject Code: 4300006

Date: 2025-04-16

Subject Name: CHEMISTRY

Time Duration: 90.0 minutes

Total Marks: 120

Instructions:

1. Stable Internet Required: Ensure a good connection.
2. Use Allowed Devices: Only a laptop/PC; no mobile phones or smartwatches.
3. No Switching Tabs: Changing windows may lead to disqualification.
4. Answer all questions within the given time limit. No extra time will be provided.
5. Submit the exam before the deadline, as responses will not be accepted afterward.

1. Which acid is present in Tomato ?

- ☐ Citric Acid ☒ Oxalic Acid ☐ HCL ☐ Lactic Acid

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2. Which acid is a strong Acid in the following

- ☒ HCL pH 1 ☐ CH₃COOH pH5 ☐ Lemon Juice pH 2.2 ☐ Pure Milk pH 6

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3. Na₂CO₃.10H₂O is known as

- ☐ Baking Soda ☐ Baking Powder ☒ Washing Soda ☐ Bleaching Powder

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4. pH value less than 7 indicates that the solution is

- ☒ Acidic ☐ Basic ☐ Neutral ☐ No effect

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5. Which salt is Neutral salt ?

- ☐ NH₄Cl ☒ CH₃COONH₄ ☐ CH₃COONa ☐ Na₂CO₃

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6. Lactic acid is present in

- ☐ Orange ☐ Tea ☒ Curd ☐ Vinegar

2

7. Which of the following are present in a dilute Aqueous solution of Hydrochloric Acid?

- ☒ H₃O⁺ + Cl⁻ ☐ H₃O⁺ + OH⁻ ☐ Cl⁻ + OH⁻ ☐ Unionised HCl

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8. CuSO₄.5H₂O In this Compound the water molecule is called

- ☒ Water of crystallization ☐ Pure water ☐ Soda Water ☐ None of these

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9. Which of the following salts does not contain water of crystallization?

- ☐ Blue Vitriol ☒ Baking Soda ☐ Gypsum ☐ Washing Soda

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10. An aqueous solution turns the red litmus solution blue. Excess addition of which of the following solutions would reverse the change?

- ☐ Baking Powder ☐ Lime ☐ Ammonium Hydroxide solution ☒ HCl

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11. In which pH range does our body work to survive in the atmosphere?

- ☐ 5.5 to 8.5 ☒ 7.0 to 7.8 ☐ 2.3 to 7.0 ☐ 7.5 to 12.5

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12. What is the chemical formula of POP (Plaster of Paris)?

- ☐ $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ ☐ $\text{CaSO}_4 \cdot 3\text{H}_2\text{O}$ ☒ $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$ ☐ $\text{CaCO}_3 \cdot \frac{1}{2}\text{H}_2\text{O}$

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13. Which salt is Acidic in nature ?

- ☒ NH_4Cl ☐ $\text{CH}_3\text{COONH}_4$ ☐ NaCl ☐ NaOH

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14. The chemical formula for Hydrochloric Acid

- ☒ HCl ☐ CaCl_2 ☐ NaCl ☐ NaOH

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15. The Chemical Formula of Sulphuric Acid

- ☐ HCl ☒ H_2SO_4 ☐ CaSO_4 ☐ H_2SO_3

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16. Which of these helps identify acids and bases through smell?

- ☐ Litmus Paper ☒ Olfactory indicators ☐ pH scale ☐ Universal Indicator

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17. The compound formed when a metal reacts with an acid is called

- ☐ Acid ☐ Basic ☒ Salt ☐ None of these

2

18. Acid + Metal \rightarrow Salt + _____

- ☐ Acid ☐ Base ☐ Salt ☒ H_2

2

19. The chemical formula of sodium zincate

- ☐ Na_2Zn ☐ ZnNa_2 ☒ Na_2ZnO_2 ☐ NaZn

2

20. Which of the given chemical equations is balanced?

- ☐ $\text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{O}_2$
☐ $\text{NaNO}_3 \rightarrow \text{NaNO}_2 + \text{O}_2$
☒ $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$
☐ $\text{Al}_2\text{CO}_3 \rightarrow \text{Al}_2\text{O}_3 + \text{CO}_2$

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21. In which reaction is an atom or group of atoms present in a molecule displaced by one another atom ?

- ☒ Displacement ☐ Double displacement ☐ Synthesis ☐ Decomposition

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22. In which reaction do two compounds exchange their ions to form two new compounds

- ☒ Double Displacement ☐ Displacement ☐ Combination ☐ Decomposition

2



23. In which reaction does a solid get separated from the solution?

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- ☐ Neutralization reaction
- ☒ Precipitation reaction
- ☐ Redox Reaction
- ☐ All of Above

24. Identify the substance which reduce a compound.

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- ☐ A hydrating agent
- ☐ An oxidising agent
- ☒ A reducing agent
- ☐ A dehydrating agent

25. In which reaction does the addition and the removal of oxygen takes place simultaneously ?

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- ☐ Oxidation reaction
- ☐ Precipitation Reaction
- ☒ Redox Reaction
- ☐ Reduction reaction

26. Identify the type of reaction : $H_2 + Cl_2 \rightarrow 2HCl$

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- ☐ Decomposition ☐ Double Displacement ☒ Combination ☐ Displacement

27. Magnesium + Oxygen \rightarrow Magnesium oxide

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- ☐ Reactant = Magnesium only
- ☐ Reactants = Magnesium Oxide
- ☒ Reactant = Magnesium and Oxygen
- ☐ None of These

28. Which of the following is a redox reaction?

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- ☐ $CaCO_3 \rightarrow CaO + CO_2$
- ☒ $CuO + H_2 \rightarrow Cu + H_2O$
- ☐ $NaOH + HCl \rightarrow NaCl + H_2O$
- ☐ $CaO + 2HCl \rightarrow CaCl_2 + H_2O$

29. How is the decomposition of silver chloride carried out?

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- ☐ By Electricity ☒ By Sunlight ☐ By Water ☐ By Heat

30. Which metal can prevent the corrosion of tin ?

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- ☒ Zinc ☐ Copper ☐ Lead ☐ Silver

31. Lime water turns milky when ____ gas is passed through it

2

- ☐ H_2 ☐ CO ☒ CO_2 ☐ SO_2

32. The process of cellular respiration is ____ reaction.

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- ☐ Exothermic ☐ Endothermic ☒ Redox ☐ Decomposition



33. A white precipitate will be formed if we add common salt solution to _____ solution

- ☒ AgNO₃ ☐ KNO₃ ☐ CuSO₄ ☐ Na₂SO₄

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34. The removal of oxygen from a reactant is called _____

- ☐ Oxidation ☐ Rancidity ☒ Reduction ☐ Corrosion

2

35. $__\text{Fe} + __\text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + 4\text{H}_2$

- ☒ 3 Fe + 4 H₂O ☐ 4 Fe + 3 H₂O ☐ 2 Fe + 4 H₂O ☐ 4 Fe + 4 H₂O

2

36. $\text{Zn} + \text{H}_2\text{SO}_4 \rightarrow __\text{ZnSO}_4 + __\text{H}_2$

- ☒ Zn + H₂ ☐ 2 Zn + 3 H₂ ☐ 4 Zn + 2 H₂ ☐ 4 Zn + 4 H₂

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37. The Chemical Formula of Magnesium Oxide

- ☐ Mg₂O ☐ OMg ☒ MgO ☐ MgO₂

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38. Select the True Chemical Equation

- ☐ Mg₂ + O₂ -> MgO ☒ 2Mg + O₂ → 2 MgO ☐ Mg → Mg + O₂ ☐ None of These

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39. The neutralization reaction between an acid and a base is a type of

- ☒ Double displacement reaction
☐ Displacement reaction
☐ Addition reaction
☐ Decomposition reaction

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40. Which of the following gases is used in the storage of fat and oil-containing foods for long time?

- ☐ Carbon dioxide gas ☒ Nitrogen gas ☐ Oxygen gas ☐ Neon gas

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41. When ferrous sulphate is heated strongly it undergoes decomposition to form ferric oxide as a main product accompanied by change in color form:

- ☐ Blue to green ☐ Green to blue ☒ Green to brown ☐ Green to yellow

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42. All the methods mentioned below can be used to prevent the food from getting rancid except i) Storing the food in the air-tight containers ii) Storing the food in refrigerator iii) Keeping the food in clean and covering containers iv) Always touching the food with clean hands.

- ☐ (i) and (ii) ☐ (i) and (iii) ☐ (i)(iii) and (iv) ☒ (iii) and (iv)

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43. It is necessary to balance a chemical equation in order to satisfy the law of

- ☐ Conservation of Motion
☒ Conservation of mass
☐ Conservation of momentum
☐ Conservation of Energy

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44. The respiration process during which glucose undergoes slow combustion by combining with oxygen in the cells of our body to produce energy is a kind of:

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- ☒ Exothermic Process
- ☐ Endothermic Process
- ☐ Reversible Process
- ☐ Physical Process

45. In a chemical reaction between sulphuric acid and barium chloride solution the white precipitates formed are of:

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- ☐ Hydrochloric acid ☒ Barium sulphate ☐ Chlorine ☐ Sulphur

46. Which of the following are exothermic processes? i) Reaction of water with quick lime ii) Dilution of an acid iii) Evaporation of water iv) Sublimation of crystals (camphor)

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- ☒ (i) and (ii) ☐ (ii) and (iii) ☐ (i) and (iv) ☐ (ii) and (iv)

47. The process of reduction involves

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- ☐ addition of oxygen
- ☐ addition of hydrogen
- ☐ removal of hydrogen
- ☒ removal of oxygen

48. Select the oxidising agent for the following reaction $\text{H}_2\text{S} + \text{I}_2 \rightarrow 2\text{HI} + \text{S}$

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- ☒ I_2 ☐ H_2S ☐ HI ☐ S

49. Which of the following statements is true regarding a decomposition reaction

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- ☒ A single reactant breaks down into two or more products
- ☐ Two or more reactants combine to form a single product
- ☐ A metal displaces another metal to form its salt solution
- ☐ A non metal displaces another non-metal from its compound.

50. The chemical name of the baking soda commonly used in cooking is

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- ☐ Sodium chloride
- ☒ Sodium bicarbonate
- ☐ Sodium carbonate
- ☐ sodium hydroxide

51. Reaction of 'magnesium' with air is

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- ☒ Exothermic reaction
- ☐ Endothermic reaction
- ☐ Reversible reaction
- ☐ Substitution



52. When crystals of lead nitrate are heated strongly in a dry test tube

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- ☐ Crystals immediately melt
- ☒ Brown residue is left
- ☐ White fumes appear in the tube
- ☐ A yellow residue is left

53. The reaction in which two compounds exchange their ions to form two new compounds called

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Answer: Double displacement reaction

54. What is the pH value of lemon juice ?

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- ☐ 1 ☐ 7 ☐ 14 ☒ 5

55. What is the chemical formula for Acetic Acid ?

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Answer: CH_3COOH

56. Which one of the given is commonly known as blue vitriol and is used as fungicide ?

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- ☐ Potassium Nitrate ☒ Copper Sulphate ☐ Sodium Carbonate ☐ Sodium Chloride

57. Common salt beside being used in the kitchen can also be used as the raw material for the production of A) Baking Powder B) Washing Soda C) Black Ash D) Slaked Lime

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- ☐ (B) and (C) ☐ (A) and (C) ☒ (A) and (B) ☐ (B) and (D)

58. When electricity is passed through NaCl aqueous solution

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- ☐ Sodium metal is deposited
- ☐ Only chlorine gas is produced
- ☒ Chlorine and Hydrogen gases are produced
- ☐ All of the given are produced

59. Vinegar is used in pickling as it

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- ☐ Is an acid
- ☒ Prevents the growth of microbes
- ☐ Prevents drying of pickle
- ☐ Increase taste

60. Which of the following cannot be changed while balancing a chemical equation

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- ☐ No of Atoms ☐ No of Molecules ☒ Molecular formula ☐ Molecular mass

