

CHEMISTRY

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Subject Name: CHEMISTRY

Time Duration: 103.5 minutes

Total Marks: 137

1. What happens when dilute hydrochloric acid is added to iron filling ?

2

- ☐ Hydrogen gas and iron chloride are produced
- ☐ Chlorine gas and iron hydroxide are produced
- ☐ No reaction takes place
- ☐ Iron salt and water are produced

2. The solution of FeO + Chlorine turns _____ due to formation of iron (II) chloride (FeCl₂).

2

- ☐ Brown ☐ Yellow ☐ Light Blue ☐ Light green

3. A student added dilute HCL to a test tube containing zinc granules and made following observations:

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- ☐ The zinc surface become dull and black
- ☐ A gas evolved which burnt with a pop sound.
- ☐ The solution remains colourless
- ☐ The solution becomes green in colour.

4. Which of the following reactions will produce effervescence due to gas formation ?

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- ☐ Copper (Cu) reacting with dilute hydrochloric acid (HCL)
- ☐ Zinc (Zn) reacting with dilute sulfuric acid (H₂SO₄)
- ☐ Iron (Fe) reacting with copper sulphate (CuSO₄) solution
- ☐ Sodium chloride (NaCl) dissolving in water

5. Which of the following reactions will produce effervescence due to carbon dioxide gas (CO₂) ?

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- ☐ Mg reacting with HCL
- ☐ Na₂CO₃ reacting with H₂SO₄
- ☐ Iron (Fe) reacting with hydrochloric acid (HCL)
- ☐ Copper (Cu) reacting with dilute nitric acid (HNO₃)

6. The reaction of Hydrogen (H₂) gas with Oxygen gas to form water is an example of

2

- ☐ Combination reaction
- ☐ Redox reaction
- ☐ Exothermic reaction
- ☐ All of these reaction



- 7. The blue flame in the below image represents the burning of which metal ?** 2
- ☐ Iron ☐ Copper ☐ Sodium ☐ All metal burn to give a blue flame
- 8. The yellow flame is observed on burning which metal ?** 2
- ☐ Copper ☐ Iron ☐ Potassium ☐ Sodium
- 9. The purple flame is observed on burning which metal ?** 2
- ☐ Potassium ☐ Calcium ☐ Barium ☐ Strontium
- 10. In the context of redox reaction the removal of hydrogen from a substance is known as ____.** 2
- ☐ Oxidation ☐ Dehydration ☐ Dehydrogenation ☐ Reduction
- 11. In the context of redox reaction the removal of oxygen from a substance is known as ____.** 2
- ☐ Reduction ☐ Dehydration ☐ Dehydrogenation ☐ Oxidation
- 12. Dissolving sugar is an example of** 2
- ☐ Physical Change ☐ Chemical Change ☐ Redox Reaction ☐ None of these
- 13. $\text{CuSO}_4 + \text{Zn} \rightarrow \text{Cu} + \text{ZnSO}_4$ reaction is an example of a:** 2
- ☐ Double displacement reaction
☐ Displacement reaction
☐ Combination reaction
☐ Decomposition reaction
- 14. What happens when dilute hydrochloric acid is added to Zn Granules ?** 2
- ☐ Zinc salt and water are produced
☐ No reaction takes place
☐ Hydrogen gas and Zinc chloride are produced
☐ Chlorine gas and Zinc hydroxide are produced
- 15. Translate the following statements into chemical equation and then balance it.
 Barium chloride reacts with aluminium sulphate to give aluminium sulphate to give aluminium chloride and a precipitate of barium sulphate.** 2
- ☐ $\text{BaCl}_2 + \text{Al}_2(\text{SO}_4)_3 \rightarrow \text{AlCl}_3 + \text{BaSO}_4$
☐ $3\text{BaCl}_2 + \text{Al}_2(\text{SO}_4)_3 \rightarrow 2\text{AlCl}_3 + 3\text{BaSO}_4$
☐ $3\text{BaCl}_2 + 2\text{Al}_2(\text{SO}_4)_3 \rightarrow 3\text{AlCl}_3 + 4\text{BaSO}_4$
☐ None of above



16. Identify the type of reaction in each case a. Zinc Carbonate (s) \rightarrow Zinc Oxide (s) + Carbon dioxide (g) b. Hydrogen (g) + Chlorine (g) \rightarrow Hydrogen Chloride (g)

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- ☐ Thermal Decomposition , Combination reaction
- ☐ Decomposition, Redox Reaction + Combination reaction
- ☐ Displacement , Combination reaction
- ☐ None of Above

17. The balancing equations is in accordance with of chemical :

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- ☐ Law of Combining Volumes
- ☐ Law of Constant Proportions
- ☐ Law of Conservation of mass
- ☐ Both B and C

18. What type of reaction is respiration

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- ☐ Exothermic reaction
- ☐ Endothermic reaction
- ☐ Reduction reaction
- ☐ Combination reaction

19. A solution of a substance 'X' is used for white washing. Name the substance 'X' and write its chemical formula.

2

- ☐ Lime Stone, CaCO_3
- ☐ Lime, CaCO_3
- ☐ Calcium Oxide, CaO
- ☐ Calcium Carbonate, CaCO_3

20. Write the balanced reaction of Calcium Oxide with water and state what type of reaction is this.

2

- ☐ $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{CaOH} + \text{H}_2$, displacement
- ☐ $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}$, combination reaction
- ☐ $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$, decomposition reaction
- ☐ $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{CaOH}$, Combination reaction

21. The reaction in which two compounds exchange their ions to form two new compounds is

2

- ☐ a displacement reaction
- ☐ a decomposition reaction
- ☐ an isomerization reaction
- ☐ a double displacement reaction

22. When green coloured ferrous sulphate crystals are heated, the colour of the crystal changes because

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- ☐ It is decomposed to ferric oxide
- ☐ It loses water of crystallisation
- ☐ It forms SO_3
- ☐ it forms SO_2



- 23. A compound used for white washing is** 2
☐ Quick lime ☐ Slaked Lime ☐ Blue Vitriol ☐ Limestone
- 24. Color of Magnesium oxide is** 2
☐ White ☐ Blue ☐ Grey ☐ Pink
- 25. A substance x is an oxide of an group 2 element is used in cement industry. On treatment with water it forms solution which turns red litmus to blue. Identify X ?** 2
☐ Slaked Lime ☐ Quick lime ☐ Silver Sulphide ☐ Limestone
- 26. Which of the following is true for an unbalanced chemical equation ?** 2
☐ Number of atom is equal on both sides of the equation
☐ Number of atoms is less on the left side of the equation
☐ Number of atoms is more on the right side of the equation
☐ Both B and C
- 27. Which reactant is reduced in given reaction $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$** 2
☐ Copper Oxide ☐ Oxygen ☐ Hydrogen ☐ None of Above
- 28. Which of the following does not involve a chemical reaction ?** 2
☐ Digestion of food in our body
☐ Process of Respiration
☐ Burning of candle wax when heated
☐ Melting of candle wax on heating
- 29. The neutralization reaction between an acid and a base is a type of** 2
☐ double displacement reaction
☐ displacement reaction
☐ addition reaction
☐ Decomposition reaction
- 30. The neutralization reaction between an acid and base is a type of** 2
☐ Endothermic ☐ Exothermic ☐ Amphoteric ☐ None of Above
- 31. Which of the following statement about the reaction below are incorrect ? $2\text{PbO(s)} + \text{C(s)} \rightarrow 2\text{Pb(s)} + \text{CO}_2\text{(g)}$** 2
 1. lead is getting reduced 2. Carbon dioxide is getting oxidised 3. Carbon is getting oxidised 4. Carbon is getting oxidised
☐ 1 and 2 ☐ 1 and 3 ☐ 1, 2 and 3 ☐ all of above
- 32. On immersing an iron nail in CuSO_4 solution for a few minutes, you will observe** 2
☐ No reaction takes place
☐ The color of solution fades away
☐ The Surface of iron nails acquire a black coating
☐ The color of solution changes to green



33. Which of the following is not physical change ?

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- ☐ Boiling of water to give water vapour
- ☐ Melting of ice to give water
- ☐ Dissolution of salt in water
- ☐ Combustion of Liquefied Petroleum Gas (LPG)

34. We store silver chloride in a dark coloured bottle because it is

2

- ☐ a white solid
- ☐ undergoes redox reaction
- ☐ to avoid action by sunlight
- ☐ none of above

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

2

- ☐ HCL ☐ BaSO₄ ☐ SO₄ ☐ CL

36. A chemical reaction does not involve

2

- ☐ Formation of new substances entirely different properties than that of the reactants
- ☐ Breaking of old chemical bonds and formations of new chemical bonds.
- ☐ Rearrangement of the atoms of reactants to form new products
- ☐ Changing of atom of one element into those of another element to form new products.

37. The displacement reaction between iron (III) oxide and a metal X is used for welding the rail tracks. Here X is :

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- ☐ Copper granules ☐ Sodium pellets ☐ Aluminium dust ☐ Magnesium ribbon

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

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- ☐ Blue to Green ☐ Green to Brown ☐ Green to Yellow ☐ Brown to Green

39. Before burning in air, the magnesium ribbon is cleaned by rubbing with a sand paper to :

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- ☐ Make the ribbon surface shinier
- ☐ Remove the layer of magnesium oxide from the ribbon surface
- ☐ Remove the layer of magnesium carbonate from the ribbon surface
- ☐ Remove the moisture from the ribbon surface

40. Oxidation is a process which involves

2

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



41. Reduction is a process which involves

2

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

42. In an electrolytic cell where electrolysis is carried, anode has:

2

- ☐ Positive charge
- ☐ Negative Charge
- ☐ Connected to negative terminal of the battery
- ☐ None of these is correct

43. To indicate the presence of gaseous reactants or product, we use the symbol

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- ☐ (Product)g or (Reactant)g
- ☐ (Product)- or (Reactant)-
- ☐ (Product). or (reactant).
- ☐ Both (a) and (b)

44. Which of the following is a physical change ?

2

- ☐ Formation of curd from milk
- ☐ Ripening of fruits
- ☐ Getting salt from sea water
- ☐ Burning of wood

45. Silver article turns black when kept in the open for a few days due to formation of

1

- ☐ H₂S ☐ AgS ☐ AgSO₄ ☐ Ag₂S

46. Which of the following is not a characteristic of a chemical reaction ?

2

- ☐ Change in state
- ☐ Change in temperature
- ☐ Evolution of gas
- ☐ Evolution of liquid

47. Chemical formula of marble

2

- ☐ CaO ☐ Ca(OH)₂ ☐ Mg(OH)₂ ☐ CaCO₃

48. $a\text{Mg}_3\text{N}_2 + b\text{H}_2\text{O} \rightarrow c\text{Mg(OH)}_2 + d\text{NH}_3$ when the equation is balanced, the coefficients a, b, c and d respectively are -

2

- ☐ 1, 6, 3, 2 ☐ 1, 3, 3, 2 ☐ 1, 2, 1, 3 ☐ 2, 3, 6, 2

49. In the reaction $x\text{Pb(NO}_3)_2 \rightarrow y\text{PbO(s)} + z\text{NO}_2\text{(g)} + \text{O}_2\text{(g)}$ Values of x, y and z respectively are

2

- ☐ 1, 1, 2 ☐ 2, 2, 4 ☐ 1, 2, 4 ☐ 4, 2, 2



50. In the balanced equation $\text{Na}_2\text{CO}_3 + x\text{HCl} \rightarrow 2\text{NaCl} + \text{CO}_2 + \text{H}_2\text{O}$. The value of x is

- ☐ 1 ☐ 2 ☐ 3 ☐ 4

2

51. Lead nitrate $\text{Pb}(\text{NO}_3)_2$, on heating forms Lead oxide (PbO) solid and Nitrogen dioxide gas. What are the color of lead oxide and nitrogen dioxide ?

- ☐ White, Colourless ☐ White, Brown ☐ Yellow, Brown ☐ Yellow, Colourless

2

52. One of the following is an endothermic reaction. This is

- ☐ Combination of carbon and oxygen to form carbon monoxide
☐ Combination of nitrogen and oxygen to form nitrogen monoxide
☐ Combination of glucose and oxygen to form carbon dioxide and water
☐ Combination of zinc and hcl form zinc chloride and hydrogen

2

53. Name of the products formed when iron fillings are heated with dillute hydrochloric acid

- ☐ Fe (III) chloride and water
☐ Fe (II) chloride and water
☐ Fe (II) chloride and hydrogen gas
☐ Fe (III) chloride and hydrogen gas

2

54. A reaction of hyrdogen with water to form water is

- ☐ Endothermic reaction
☐ Exothermic reaction
☐ Decomposition reaction
☐ Reaction not feasible

2

55. What is observed when a solution of potassium Iodide is added to silver nitrate solution ?

- ☐ No reaction takes place
☐ White precipitate of silver iodide is formed
☐ yellow precipitate of AgI is formed
☐ AgI is soluble in water

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56. Give the ratio in which hydrogen and oxygen are present in water by volume.

- ☐ 1:2 ☐ 1:1 ☐ 2:1 ☐ 1:8

2

57. To facilitate the electrolysis of water we add a few drops of acids like sulfuric acid or salts like NaCl because :

- ☐ It acts as a catalyst
☐ It prevents the decomposition of electrodes used
☐ It increase the electrical conductivity of water
☐ None

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58. Which of the following is a displacement reaction ?

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- ☐ $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4$
- ☐ $\text{BaCl}_2(\text{aq}) + \text{Na}_2\text{SO}_4(\text{aq}) \rightarrow \text{BaSO}_4(\text{s}) + 2\text{NaCl}(\text{aq})$
- ☐ $\text{H}_2 + \text{O}_2 \rightarrow \text{H}_2\text{O}$
- ☐ $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$

59. Which one is not type of decomposition reaction ?

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- ☐ Heat ☐ Electricity ☐ Light ☐ Water

60. Complete the following decomposition reaction $2\text{FeSO}_4 \rightarrow \text{Fe}_2\text{O}_3 + \text{X} + \text{Y}$

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- ☐ CO_2, CO_3 ☐ NO_2, NO_3 ☐ $\text{H}_2\text{O}, \text{H}_2$ ☐ SO_2, SO_3

61. Which reaction is not a characteristic of a chemical change

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- ☐ $\text{Mg} + \text{O}_2 \rightarrow \text{MgO}_2$ ☐ $\text{Au} + \text{H}_2\text{O} \rightarrow \text{Au}(\text{OH})_2$ ☐ $\text{C} + \text{O}_2 \rightarrow \text{CO}_2$ ☐ None of above

62. Which is not a type of chemical reaction

2

- ☐ combination ☐ displacement ☐ decomposition ☐ None of Above

63. Burning of Coal is

2

- ☐ Displacement ☐ Decomposition ☐ Combination ☐ All of Above

64. An example of exothermic reaction is

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- ☐ $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2$ ☐ $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$ ☐ $4\text{Fe} + 3\text{O}_2 \rightarrow 2\text{Fe}_2\text{O}_3$ ☐ None

65. Symbol A used while representing some chemical changes stands for

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- ☐ Light ☐ Heat ☐ Catalysts ☐ Pressure

66. Which of the following statements is/are correct ?

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- ☐ A chemical equation tells us about the substances involved in a reaction
- ☐ A chemical equation informs us about the symbols and formulae of the substances involved in a reaction
- ☐ A chemical equation tells about the atoms or molecules of the reactants and products in a reaction
- ☐ All of Above

67. Which of the following is a combustion reaction

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- ☐ Burning of Petrol ☐ Boiling of water ☐ Melting of wax ☐ None of these

68. Neutralization reaction is an example of

2

- ☐ exothermic reaction ☐ endothermic reaction ☐ oxidation ☐ None of these

69. Which of the following reactions involves the combination of two elements ?

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- ☐ $\text{CaCO}_3 + \text{CO}_2 \rightarrow \text{CaCO}_3$
- ☐ $4\text{Na} + \text{O}_2 \rightarrow 2\text{Na}_2\text{O}$
- ☐ $\text{SO}_2 + \frac{1}{2}\text{O}_2 \rightarrow \text{SO}_3$
- ☐ $\text{NH}_3 + \text{HCl} \rightarrow \text{NH}_4\text{Cl}$

