LORETO HOUSE
HALF YEARLY ASSESSMENT 2021-2022
CHEMISTRY

CLASS X **FULL MARKS: 30**

All questions are compulsory.
Select the correct option for each of the following questions.

Q1. Which of the following has highest atomic radius: [1]
(a) Potassium (c) Hydrogen
(b) Lithium (d) Sodium

Q2. The correct order of ionisation potential: [1]
(a) Mg > Ar > Si (c) Mg > Si > Ar
(b)) Mg < Ar < Si (d) Mg < Si < Ar

Q3. The empirical formula of an organic compound is CH_2O, then its molecular formula can be: [1]
(a) $C_2H_2O_2$ (c) C_3H_6O
(b) C_2H_4O (d) $C_6H_{12}O_6$

Q4. A particular solution contains molecules and ions of the solute; so it is a: [1]
(a) Weak acid (c) Strong base
(b) Strong acid (d) Salt solution

Q5. Hydroxide of this metal is soluble in sodium hydroxide solution. [1]
(a) Magnesium (c) Silver
(b) Lead (d) Copper

Q6. During the electrolysis of acidified water; which of the following takes place? [1]
(a) Oxygen is released at cathode.
(b) Oxygen is released at anode.
(c) Hydrogen is released at anode.
(d) Sulphur dioxide is released at anode.

Q7. To increase the pH value of a neutral solution, we should add: [1]
(a) an acid (c) an alkali
(b) an acid salt (d) a salt

Q8. During ionisation metals lose electrons, this change is called: [1]
(a) Oxidation (c) Redox
(b) Reduction (d) Displacement

Q9. The vapour density of carbondioxide [At. Masses:C=12,O=16] is: [1]
(a) 12 (c) 16
(b) 44 (d) 22

Q10. The value of Avogadro number is: [1]
(a) 6.022×10^{-23} (c) 6.022×10^{23}
(b) 6.22×10^{23} (d) 6.22×10^{-23}

Q11. NaCl is an ionic compound; which of the following statements is incorrect? [1]
(a) NaCl is solid at room temperature.
(b) NaCl is not soluble in water.
(c) Aqueous solution of NaCl can conduct electricity.
(d) NaCl has high melting point.

Q12. Chlorine and chloride ions: [1]
(a) Are chemically same.
(b) Have same number of electrons
(c) Have same number of protons
(d) None of the above.

Q13. The metal oxide which can react with an acid as well as an alkali is: [1]
(a) Silver oxide
(b) Copper(II) oxide
(c) Aluminium oxide
(d) Calcium oxide

Q14. Which one of the following salt solutions on reaction with excess of ammonium hydroxide solution results finally in dissolution of the precipitate first formed? [1]
(a) $AlCl_3(aq)$
(b) $Fe(SO_4)_3(aq)$
(c) $FeSO_4(aq)$
(d) $Zn\ SO_4(aq)$

Q15. A compound of X and Y has the empirical formula XY_2. If its vapour density is equal to its empirical formula weight, the molecular formula would be: [1]
(a) X_2Y_3
(b) X_2Y_4
(c) X_4Y_2
(d) X_2Y

Q16. During the electroplating of an article with silver, the reaction taking place at anode is: [1]
(a) $Ag^{+2} + 2e \longrightarrow Ag$
(b) $Ag - 2e \longrightarrow Ag^{+2}$
(c) $Ag - e \longrightarrow Ag^{+}$
(d) $Ag^{+} + e \longrightarrow Ag$

Q17. Energy conversion during electrolysis is: [1]
(a) Chemical to electrical
(b) Electrical to chemical
(c) Electrical to heat
(d) Chemical to heat

Q18. During electrolysis of molten lead bromide which of the following takes place? [1]
(a) Bromine is released at the cathode.
(b) Lead is deposited at the anode.
(c) Bromide ion gains electron.
(d) Lead is deposited at the cathode.

Q19. Which of the following indicator shows no change in acids? [1]
(a) Phenolphthalein
(b) Methyl orange
(c) Onion
(d) Blue litmus

Q20. The aqueous solutions of two substances P and Q have pH of 5 and 13 respectively. The correct inference is : [1]
(a) Solution P is of HCl and Q is NH_4OH
(b) Solution P is of CH_3COOH and Q is $Ca(OH)_2$
(c) Solution P is of HNO_3 and Q is NH_4OH
(d) Solution P is of CH_3COOH and Q is NaOH

Q21. What is the mass percentage of boron in borax $Na_2B_4O_7.10H_2O$? [1]
[At. Masses: H=12,O=16,B=11, Na=23]
(a) 21.8 (c) 16.3
(b) 11.5 (d) 10.9

Q22. In the electrochemical series, the reducing character of the elements from top to bottom: [1]
(a) Increases (c) Decreases
(b) Remains unchanged (d) None of these

Q23. A gaseous compound of nitrogen and hydrogen contains 12.5% hydrogen by mass. What will be its molecular formula if its molecular mass is 37. [At. Masses: H=12,C=12] [1]
(a) NH_3 (c) N_2H_4
(b) N_2H_6 (d) N_2H_7

Q24. The salt solution which does not react with ammonium hydroxide is: [1]
(a) $Ca(NO_3)_2$ (c) $Pb(NO_3)_2$
(b) $Zn(NO_3)_2$ (d) $Cu(NO_3)_2$

Q25. Which of the following statements is not correct about the trends when going from left to right across the Periodic Table? [1]
(a) The elements become less metallic in nature.
(b) The number of valence electrons increases.
(c) The atoms lose their electrons more easily.
(d) The oxides become more acidic.

Q26. Bonding in this molecule can be understood to involve coordinate bonding: [1]
(a) Carbon tetrachloride (c) Hydrogen chloride
(b) Hydrogen (d) Ammonium chloride

Q27. The colour of the precipitate formed when ferric ions react with ammonium hydroxide: [1]
(a) Blue (c) Dirty green
(b) Reddish brown (d) White

Q28. Among the elements given below, the element with the least electronegativity is: [1]
(a) Lithium (c) Boron
(b) Carbon (d) Fluorine

Q29. An element Z has atomic number 16. The formula of the compound between Z and hydrogen will be: [1]
(a) ZH_2 (c) ZH_6
(b) Z_2H (d) ZH_4

Q30. The process by which polar covalent compounds are converted into ions is: [1]
(a) Dissociation (c) Electrolysis
(b) Ionisation (d) Polarisation
