AIR FORCE BAL BHARATI SCHOOL, LODI ROAD,DELHI

CLASS-9

SUBJECT : CHEMISTRY

SA-2, Revision worksheet

Q1. (i) What is the mass of 0.5 mole of NH_3?
(ii) Calculate the no. of particles in 31g of P_4 molecules.
(iii) Find the no. of moles in 87g of K_2SO_4.
(Atomic masses of N=14u, H=1u, P=31u, K=39u, S=32u, O=16u)

Q2. Write the names of the following compounds.
(i) $Mg(HCO_3)_2$ (ii) $(NH_4)_2CO_3$ (iii) $Zn_3(PO_4)_2$ (iv) $FeCl_3$

Q3. Calculate the molecular masses of the following:
(i) Acetic acid, CH_3COOH (ii) Ethanol, C_2H_5OH (iii) Glucose, $C_6H_{12}O_6$

Q4. State any 4 postulates of Dalton's atomic theory.

Q5. State the 2 laws of chemical combination. Give example of each.

Q6. Define atomicity. What is the atomicity of the following:
(i) Ozone (ii) Helium (iii) Chlorine (iv) Phosphorus

Q7. What is the no. of valence electrons in:
(i) Sodium ion, Na^+
(ii) Oxide ion, O^{2-}

Q8. A natural sample of iron has isotopes ${}^{54}_{26}Fe$, ${}^{56}_{26}Fe$, ${}^{57}_{26}Fe$ in the ratio of 5%, 90%, 5% resp. What will be the average atomic mass of iron?

Q9. Two elements are represented as ${}^{35}_{17}X$ and ${}^{24}_{12}Y$.
(i) Which of these elements will lose and gain electrons?
(ii) What is the valency of X & Y?
(iii) Write electronic configurations of X and Y?

Q10. What is the difference between isotopes and isobars? Give uses of 3 isotopes.

Q11. From Rutherford's α-particle scattering experiment, give the experimental evidence for the following conclusions:
(i) most of the space inside the atom is empty.
(ii) the nucleus of an atom is positively charged.

Q12. Draw the electronic structure of sodium and calcium with atomic number 11 and 20 resp.

Q13. Define the following:
(i) valency of an element (ii) Mass number (iii) Atomic number (iv) Valence electrons

Q14. An element has atomic number 12 and mass number 26. What is the no. of electrons, protons and neutrons present in it? Write its electronic configuration.

Q15. What were the limitations of Rutherford's model of an atom? How these limitations were overcome by Bohr's model?

Q16. To verify Law of Conservation of mass in the laboratory, a student carried out the reaction between 1.16g Sodium Chloride and silver nitrate in a conical flask. How much Silver nitrate should react with 1.16g sodium chloride to form 1.7g sodium nitrate and 2.87g silver chloride?

Q17. Give reasons:
(i) Isotopes of an element are chemically similar.
(ii) An atom is electrically neutral.
(iii) Noble gases show least reactivity.
(iv) Na^+ has completely filled K and L shells.

Q18. What is amu? Which quantity is measured in terms of amu?

Q19. To verify law of conservation of mass, when we mix solutions of Barium Chloride and Sodium Sulphate, which of the following observations is correct?
(a) No reaction takes place.
(b) Colorless solution is obtained.
(c) White precipitate is formed.
(d) Green precipitate is formed.

Q20. The atomic number of three elements A,B and C are 9,10 and 13. Which of them will form a cation?

Q21. Law of conservation of mass holds true and can be verified:
(a) only for precipitation reaction carried in open system.
(b) only for precipitation reaction carried in closed system.
(c) for all types of chemical reactions carried in open system.
(d) for all types of chemical reactions carried in closed system.

Q22. Which of the following have 18 electrons?
Ca^{2+}, K^+, Na, Cl^-, Ar

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