Chemistry Full Portion Revision

1. Complete and Balance the chemical equations given below and state the type of reaction for each
   a. $Ca + O_2$ -----→
   b. $Mg + H_2SO_4$ ----→
   c. $NaCl + A\ gNO_3$ -----→ $AgCl\downarrow + NaNO_3$
   d. $AgNO_3 + NaBr$ ----→
   e. $KOH + H_2SO_4$ -----→ _____ + _____
   f. $KI + Cl_2$ ----→ _____ + _____
   g. $CH_4 + O_2$ ----→
   h. $NH_4Cl + H_2O$ ---→ NH_4OH + _____
   i. $Fe + S + \Delta \rightarrow FeS$
   j. $CuSO_4(aq) + NaOH(aq) \rightarrow Cu(OH)_2\downarrow + Na_2SO_4(aq)$
   k. $Zn + 2HCl \rightarrow ZnCl_2 + H_2\uparrow$
   l. $NaOH + HCl \rightarrow NaCl + H_2O$
   m. $CO + O_2 \rightarrow CO_2$

2. Balance the equations given below and classify the underlined chemical to the type of oxide
   a. $Mg + O_2$ ----→ $\underline{MgO}$
   b. $H_2 + O_2$ _----------→ $\underline{H_2O}$
   c. $NO + O_2$ ----→ $\underline{NO_2}$
   d. NH_4NO_3 ---------→ $\underline{N_2O} + H_2O$
   e. $Zn + O_2$ ----→ $\underline{ZnO}$
   f. $C + O_2$ ----→ $\underline{CO_2}$
   g. $\underline{Al(OH)_3} + NaOH$ ------→ $NaAlO_2 + H_2O$
   h. $\underline{CuO} + H_2O$ ----→ $Cu(OH)_2$

3. Arrange the following metals in decreasing order of their reactivity
   a. Cu, Ag, Al, Mg, Fe
   b. Ca, K, Al, Zn, Fe, Ag, Pb
   c. Br, F, I, Cl

4. Classify the following oxides into acidic, basic, amphoteric and neural categories
   a. HgO
   b. Ag_2O
   c. SO_3
   d. NO
   e. Al_2O_3
   f. ZnO
   g. SO_2

5. Match the following

Column A	Column B
Neutralization	Barium chloride with sulphuric acid
Decomposition	Zinc with copper sulphate
Displacement	Sulphuric acid with sodium hydroxide
Synthesis	Iron with Sulphur when heated
Precipitation	Splitting of water

6. Write the chemical formula for the following
   a. Sodium oxide
   b. Ferric carbonate
   c. Cupric sulphite

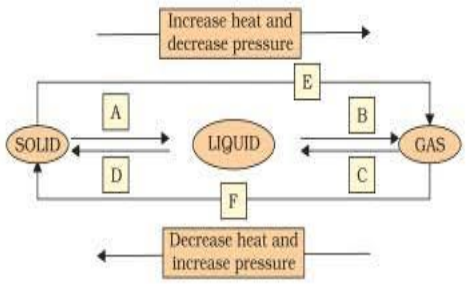
d. Potassium hydrogen carbonate
e. Calcium hydroxide
f. Zinc nitrate
g. Aluminium nitrate

7. Match the following

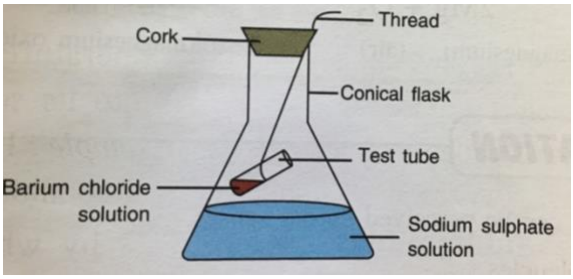
Column A	Column B
Polyatomic ion	Sodium ion
Anion	Iron
Element	Fluoride ion
Compound	Ammonium ion
Cation	Ammonia

8. Answer the following
   a. The atom of an element has 4 proton, 4 electron and 5 neutrons. What is its atomic number and mass number? Identify the element.
   b. An element 'X' has 10 electrons, 10 protons and 10 neutrons. Draw a neat diagram to show the electronic configuration of the element. Will the element be inert of reactive, give a reason for your answer?
   c. The number of electrons and neutrons in an atom are 13 and 14 respectively. Find out its mass number, atomic number, valency and symbol of the element.
   d. Find the number of electrons in each of the following
      1. Al^{3-}
      2. O^{2-}
      3. Ca^{2+}
      4. F^{-}

9. Study the diagram given below and answer the questions that follow;



   a. Name the parts labeled A,B,C and D.
   b. Name and explain the process E and F
   c. Give one example each of a substances which shows the process E and F
   d. Name any two substances which do not change their state on heating



10. Study the diagram given below and answer the following questions
   a. What would you observe when the two liquids are mixed
   b. What inference can be drawn from the observation

c. State the law this experiment helps in proving

11. Match the substances given in column 'A' to those in column 'B': [4]

Column A	**Column B**
1. Magnesium chloride	a. $(NH_4)_2SO_4$
2. Calcium Oxide	b. CaO_2
3. Ammonium sulphate	c. $MgCl_2$
4. Copper sulphate	d. Cu_2SO_3
	e. CaO
	f. Mg_2Cl_2
	g. $CuSO_4$

12. **Balance the following chemical equations**

1. $FeCl_3 + H_2S \longrightarrow FeCl_2 + HCl + S$
2. $KI + HNO_3 \longrightarrow KNO_3 + H_2O + NO_2 + I_2$
3. $Pb_3O_4 \longrightarrow PbO + O_2$
4. $MnO_2 + HCl \longrightarrow MnCl_2 + H_2O + Cl_2\uparrow$
5. $NH_3 \longrightarrow N_2 + H_2$
6. $Na + O_2 \longrightarrow Na_2O$

13. Distinguish between (give 2 points of difference)

1. Covalent and electrovalent bond
2. Isotopes and isobars
3. Acidic and basic radicals
4. Freezing point and boiling point
5. Melting and Sublimation
6. Deposition and sublimation
7. Anhydride and amphoteric
8. Alkali and Base
9. Effervescence and precipitate

14. Element P is divalent and the electrons are distributed in four shells.

(i) Write the electronic configuration of P.

(ii) If the number of neutrons = 20, find the mass number and atomic number of P.

(iii) Write the symbol for an ion of P.

(iv) State if P is a metal or a non-metal.

15. Give the electron dot diagram to show covalent bond formation in Oxygen. $[_8O^{16}]$

16. Complete the following table:

Element	No.of electrons	No. of Protons	No.of neutrons	Atomic Number	Mass Number	Electronic Configuration
K	19	19	i. ……	19	39	(2,8,8,1)
K^+	ii…….	19	20	19	39	iii…….

Cl^-	iv.....	17	18	17	35	v.....
P	15	15	16	15	vi.....	(2,8,5)

17. Identify and give reasons, whether the underlined substances are getting oxidized or reduced.

    i) H_2 + $\underline{Cl_2}$ → 2HCl
    ii) $\underline{Cu}$- → Cu^{2+}
    iii) $\underline{2HgO}$ → 2Hg + O_2
    iv) 2K + $\underline{2H_2O}$ → 2KOH + H_2
    v) $\underline{CaO}$ + 2HCl → $CaCl_2$ + H_2O

18. Give a balanced chemical equation for the following:

    i) Ammonia gas reacts with hydrogen chloride gas
    ii) A solution of copper sulphate is added to aqueous sodium hydroxide
    iii) Sodium carbonate is added to magnesium chloride
    iv) Carbon dioxide dissolved in water

19. Name the following:
    1. The type of bond between two chlorine atoms
    2. The chemical name of baking soda
    3. The neutral sub atomic particle
    4. A substance which has the same atomic number but different atomic mass
    5. The type of bond where electrons are transferred
    6. The orbital which has highest energy
    7. The smallest unit of an element which takes part in a chemical reaction
    8. The chemicals that react
    9. The chemicals that are formed during a reaction
    10. An equation which is unbalanced