

ZAMANI COLLEGE KADUNA
SS1 CHEMISTRY STUDY PACK TERM 1 2014-2015

Instruction: Read through the following outline of topics from any of your chemistry text books and make notes on them and answer the questions that follow. All of these will be due for submission as will be communicated to you. This is part of your assessment upon resumption.

Topics: Nature of Matter, Electronic Configuration and Relative Molar Mass.

Outline to study:

- ❖ **Matter**
- ✓ Definition of matter
 - Properties of matter (physical and chemical properties)
- ✓ Physical and chemical changes
 - Differences between physical and chemical changes
- ✓ Elements
- ✓ Compounds
- ✓ Mixtures (homogenous and heterogeneous mixtures with examples)
- ❖ **Particulate nature of matter**
- ✓ Atoms, Molecules, Ions, Atomicity
- ✓ Daltons atomic theory and its modification
- ❖ **Electronic configuration of the first twenty elements (KLMN)**
- ❖ **Relative molecular mass (RMM)**

Now answer the following questions:

- 1 a. Define matter.
- b. Define physical and chemical changes.
- c. Classify the following as physical or chemical change:
 - i. Dissolution of salt in water
 - ii. Burning of wood
 - iii. Melting of candle wax
 - iv. Heating of a coil by electric current
 - v. Slaking of lime
 - vi. Rusting of iron
 - vii. Melting of ice
 - viii. The condensation of water vapour into liquid
 - ix. The burning of oil in oil lamps
 - x. Freezing of water
- d. Give **five** differences between physical and chemical changes.
- 2 a. Define the following: (i) Atom (ii) Molecules (iii) Ions (iii) Atomicity
- b. State Dalton's atomic theory and its modification.
- c. Define the following with two examples in each:
 - (i) Element
 - (ii) Compound
 - (ii) Homogeneous mixture
 - (iv) Heterogeneous mixture
- d. Classify the following as element, mixture or compound:
 - (i) Sand (ii) Milk (iii) Bronze (iv) Sodium (v) Glucose (vi) Neon (vii) Milk (viii) Potassium
- e. Give **five** differences between compounds and mixtures.
- 3 a. Write down the KLMN configuration of the 1st twenty elements as shown on **pg 48** of the reference given.
- b. Calculate the RMM of the following:
 - (i) $\text{Al}(\text{NO}_3)_3$ (ii) $\text{H}_2\text{S}_2\text{O}_7$ (iii) $\text{Ca}(\text{OCl})_2$ (iv) $(\text{NH}_4)_2\text{CO}_3$ (v) CH_3COOH(N= 14, Al= 27, O= 16, Cl= 35.5, H= 1, Ca= 40, C= 12)

Reference: New School Chemistry for Senior Secondary Schools pgs 8-13, 25-26, 29, 48.