

SUMMARY OF STRANDS AND SUB STRANDS

1.0 INORGANIC CHEMISTRY

1.1. Introduction Chemistry

1.2. The Atom

1.3. The periodic Table

1.4. Chemical Bonding

1.5. Periodicity

2.0 PHYSICAL CHEMISTRY

2.1. Acids and Bases

2.2. Introduction to Salts

3.0 ORGANIC CHEMISTRY

STRAND 1.0: INORGANIC CHEMISTRY

Sub-Strand 1.1: Introduction to Chemistry

(a) Meaning of Chemistry as a Field of Science

Chemistry is a **branch of science** that studies **matter** and its **properties**, as well as how matter **changes** and **interacts** with energy. It focuses on the fundamental building blocks of matter, which are **atoms**, and how these atoms combine to form **molecules** and **compounds**. Chemistry seeks to understand the composition, structure, properties, and reactions of these substances.

(b) Branches of Chemistry

Chemistry is a broad field with many specialized areas. Some of the main branches include:

- ✓ **Organic Chemistry:** The study of carbon-containing compounds (with some exceptions). This branch is crucial for understanding life processes and creating many synthetic materials.
- ✓ **Inorganic Chemistry:** The study of compounds that generally do not contain carbon. This includes metals, minerals, and many industrial chemicals..
- ✓ **Physical Chemistry:** This branch deals with the principles of physics that underlie chemical interactions and processes. It involves studying energy changes, reaction rates, and the structure of matter.
- ✓ **Analytical Chemistry:** This involves identifying and quantifying the components of substances. It plays a vital role in quality control, environmental monitoring, and medical diagnostics.
- ✓ **Biochemistry:** This is the study of chemical processes within living organisms. It explores the chemistry of proteins, carbohydrates, lipids, and nucleic acids.
- ✓ **Industrial Chemistry:** This branch focuses on the chemical processes involved in manufacturing products on a large scale, from pharmaceuticals to plastics.