

Practice – Introduction to Chemistry

Answer the following questions using your notes on "Introduction to Chemistry" given in class.

Key 12-13

Part 1: Science

1. In your own words, what is the difference between the three different definitions given for the word "science"?

The first def. states that science is the search for knowledge, the second states that it is also how we search for knowledge, & the third says that it is the result of that search.

2. What is the name given to the act of studying the natural world and what steps do scientists use in studying the natural world?

The act of studying the natural world is referred to as "scientific inquiry." The steps are: observe, question, hypothesis, experiment, collect data, analysis, & conclusion.

3. Now that people have been doing science for hundreds of years, we have come to know so much about the complexity of our universe that it is safe to say no one person could study every aspect of the natural world in their lifetime. So, people have begun to specialize and study only certain portions of it. Answer the following questions:

a. What two major realms of science are there and what is the difference between them?

The 2 major realms are the social & natural sciences, social studies human interactions, natural studies everything else.

b. What two fields can the natural sciences be broken into and what is the difference between them?

The natural sciences include physical science & biology.

Biology studies life & the physical sciences study everything else.

Part 2: Chemistry

4. What part of the natural world do chemists specialize in studying?

Chemists study matter & changes (Δ's) matter undergoes.

5. Fill in the empty boxes in the table below:

Branches of Chemistry		
Branch	Area of emphasis	Examples
Organic Chemistry	Most carbon containing chemicals	Pharmaceuticals, plastics
Analytical Chemistry	Components & composition of chemicals	Food nutrients, quality control
Biochemistry	Matter & processes of living things	Metabolism, fermentation

6. What is the difference between engineering and technology?

Engineers use scientific knowledge to build & technology is what they build

7. What is the difference between a quantitative and qualitative observation?

A qualitative obs. identifies quality obj. possesses & quantitative includes # (quantities).