

Study Guide – Chapter 1 (Introduction to Chemistry)

chemchp1SGCorwin.docx

Name: Key Date: _____ Period: _____

1. Chemistry is defined as the science that studies the Composition of matter and its properties.

2. What is wrong with the statement: "I only buy soft drinks that don't have chemicals in them."?

All things are made of "chemicals" (elements & compounds) whether natural or synthetic.

3. The "chemists" from 8th century AD Arabia were known as alchemists. They believed in a magic potion that had miraculous healing powers and could transmute (change) lead into gold.

4. Aristotle (384-322 BC) believed that nature could be completely understood through the application of thought/logic/philosophy. According to Aristotle, in addition to the four elements proposed by Empedocles, the (any of these)

entire universe was permeated by a substance called ether. Aristotle's ideas endured for nearly

2,000 years.

5. Robert Boyle's (1627-1691) book, *The Sceptical Chymist* (1661), emphasized the need for

experimentation in scientific discovery. This led to the development of scientific method.

6. A late 17th century theory proposed that in order for something to burn (combust), it had to contain

phlogiston. The remaining material was reduced to a substance called Calx.

This theory was eventually discredited by Antoine Lavoisier through experiments that showed that Oxygen was required for combustion to occur.

7. The French scientist Antoine Lavoisier is considered to be

founder of modern chemistry due to his published works and experimental techniques.

8. A model that explains the behavior of nature is a theory, whereas a

natural law states a measurable relationship.

9. The branch of chemistry that focuses on substances containing carbon is called organic chemistry.

10. Because of its relevance to other scientific disciplines, chemistry is often called the central Science.

11. Success in studying chemistry may be dependent upon attitudes and perceptions about how difficult and relevant the subject is.

12. Table salt, sodium chloride, comes from three major sources: Salt mining, Solution mining and Solar evaporation of salt water. Most salt in the human diet comes from processed foods. For proper function of the thyroid gland, table salt also contains Iodine (potassium iodide) as a dietary supplement.

13. A scientific theory is accepted only after rigorous experimental testing, which establishes that the hypothesis is a valid interpretation of the evidence.

14. The earliest concept of science began with the Chinese, Egyptian and Greek civilizations.

15. Three positive associations for the concept of chemistry are: relevance to daily life, benefits to society, biomedical applications

(answers may vary)

(fun experiments, interesting topics, Career opportunities, etc.)