



Name:.....

Grade 9 ()

Revision sheet for Grade (9) Chemistry

FINAL EXAM–Term2,

2018/ 2019

❖ *Materials for the Exam, you should Study from:*

Chapter(3)

Lesson(1) The Atom Theory
Lesson(2) The structure of the Atom
Lesson(3) Counting Atoms
& The Revision sheet

Interactive Book: Pages (69 – 83)

A) Answer these questions: ATOMS: THE BUILDING BLOCKS OF MATTER

1) Give an example of a chemical or physical process that illustrates the law of conservation of mass.

2) State two principles from Dalton's atomic theory that have been revised as new information has become available.



3) The formation of water according to the equation $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$

Shows that 2 molecules (made of 4 atoms) of hydrogen and 1 molecule (made of 2 atoms) of oxygen produce 2 molecules of water. The total mass of the product, water, is equal to the sum of the masses of each of the reactants, hydrogen and oxygen.

What parts of Dalton's atomic theory are illustrated by this reaction?

What law does this reaction illustrate?

4) List the 3 Laws of Atomic Theory? P.70

1 _____

2 _____

3 _____

5) Write the definition of Law of conservation of Mass? P.70

6) **PROBLEMS:**

Write the answer on the line to the left. Show all your work in the space provided:

1) _____ If 3 g of element C combine with 8 g of element D to form compound **CD**. How many grams of D are needed to form compound **CD₂**?



B) SHORT ANSWER: THE STRUCTURE OF THE ATOM: p.74-79

Answer the following questions in the space provided.

- 1) In cathode-ray tubes, the cathode ray is emitted from the negative electrode, which is called the _____
- 2) The **smallest unit** of an element that can exist either alone or in molecules containing the same or different elements is the _____.
- 3) A **positively charged** particle found in the nucleus is called _____
- 4) A nuclear particle that has **no electrical** charge is called _____
- 5) The subatomic particles that are **least massive** and **most massive**, respectively are the _____ and _____.
- 6) A cathode ray produced in a gas-filled tube is deflected by a magnetic field. A wire carrying an electric current can be pulled by a magnetic field. A cathode ray is deflected away from a negatively charged object. What property of the cathode ray is shown by these phenomena?

- 7) How would the electrons produced in a cathode-ray tube filled with neon gas compare with the electrons produced in a cathode-ray tube filled with chlorine gas?

- 8) a) Is an atom positively charged, negatively charged, or neutral?

b) Explain how an atom can exist in this state.



9) Compare the **THREE** subatomic particles in terms of **locations** in the **atom, mass, and relative charge. P.79**

| | locations in the atom | mass | relative charge |
|------------|-----------------------|------|-----------------|
| e - | | | |
| p + | | | |
| n 0 | | | |

C) SHORT ANSWER: THE STRUCTURE OF THE ATOM: p. 80- 83

1- Explain the difference between the:

- a) Mass number b) Atomic number of a nuclide c) Isotopes

2- Explain what happens to each of the following as the atomic masses of the elements in the periodic table increase:

a. the number of **protons**

b. the number of **electrons**

c. the number of atoms in **1 mole** of each element



3- Use a periodic table to complete the following chart: (write the Symbol)

| Element | Symbol | Atomic number | Mass number |
|---------------|--------|---------------|-------------|
| Europium-151 | Eu | 63 | 151 |
| Silver -109 | Ag | 47 | 109 |
| Tellurium-128 | Te | 52 | 128 |

4- List the number of protons, neutrons, and electrons found in (Zinc- 66):

_____ protons

_____ neutrons

_____ electrons

GOOD LUCK!