

University Hamma Lakhdar of El Oued,

Faculty of Exact Sciences

First Year Master Physics/ 2021-2022

name:	Family name:	Group:	Time= 1 Hour
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Correction Technical English Exam

An atom is the smallest particle into which an element can be divided without losing its chemical identity. Atoms consist of a heavy central nucleus surrounded by a cloud of negatively charged particles called electrons. The nucleus contains positive particles (protons) and electrically neutral particles (neutrons). The number of protons is called the atomic number. This number uniquely identifies each chemical element. In turn, protons and neutrons are composed of quarks. An element is a chemical substance that is made up of single kind of atom. Iron, carbon, and hydrogen are all elements. A molecule is formed when two or more atoms of any kind of element are joined together chemically. If a molecule contains two or more different elements, it is known as a compound. A water molecule is a compound of the elements hydrogen and oxygen. If an atom or molecule becomes electrically charged by gaining or losing one or more electrons, it becomes an ion. If the atom gains electrons, it has a negative charge. If it loses electrons, it has a positive charge. Our current model of the atom can be broken down into three constituent's parts – protons, neutron, and electrons. Each of these parts has an associated charge, with protons carrying a positive charge, electrons having a negative charge, and neutrons possessing no net charge. In accordance with the Standard Model of particle physics, protons and neutrons make up the nucleus of the atom, while electrons orbit it in a "cloud".

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Read carefully the text above and answer the questions below:

1- **Comprehension of the text: (3 pts)**

- Give title to this text.

WHAT IS AN ATOM?

- What are the parts of an atom?

Protons, neutron, and electrons

- Can an atom be destroyed?

Atoms cannot be created nor destroyed, and they are indestructible.

2- Linguistic competency:

- Give the equivalent in Arabic of the terms listed below: (10 pts)

nucleus = الانوية	the mainstream = التيار الرئيسي
Currents = تيارات	overlapping branches = الفروع المتداخلة
Plasma = بلازما	spectral lines = الخطوط الطيفية
a rare mineral = المعدن النادر	Pressure = الضغط
radioactive waste = النفايات الشعاعية	Fusion = الاندماج

- Fill in the gaps with the following words: (3 pts)
Atom, radioactively, configuration

Atoms don't age. Atoms radioactively decay when a lower-energy nuclear configuration exists to which they can transition. The actual decay event of an individual atom happens randomly and is not the result of the atom getting old or changing through time.

- Translate in Arabic the below paragraphs: (4 pts)

If a molecule contains two or more different elements, it is known as a compound. A water molecule is a compound of the elements hydrogen and oxygen. If an atom or molecule becomes electrically charged by gaining or losing one or more electrons, it becomes an ion. If the atom gains electrons, it has a negative charge. If it loses electrons, it has a positive charge.

إذا كان الجزيء يحتوي على عنصرين مختلفين أو أكثر ، فإنه يُعرف باسم المركب. جزيء الماء مركب من عنصري الهيدروجين و الأكسجين. إذا أصبحت ذرة أو جزيء مشحونًا كهربائيًا عن طريق اكتساب أو فقدان إلكترون واحد أو أكثر، فإنها تصبح أيونًا. إذا اكتسبت الذرة إلكترونات، تصبح لديها لها شحنة سالبة. إذا فقدت الإلكترونات ، يكون لها شحنة موجبة.

Read carefully the text above and answer the questions below:

1- Comprehension of the text: (3 pts)

- Give title to this text.

WHAT IS AN ATOM?

- What are the parts of an atom?

Protons, neutron, and electrons