

PART ONE: Reading and Interpreting (15points)

Chemical reactions happen around us all the time. Some happen all by themselves like photosynthesis, cooking food and burning fuel. A chemical reaction is a process when one or more substances changed into other substances. How do **they** happen? Atoms can explain **it** all. How do they happen?

Electrons surround the nucleus of an atom in layers called shells. The first shell, closest to the nucleus, is full with only two electrons. The second shell is full with eight electrons, and the third shell will hold eight electrons. For the most stable atom, the outer shell needs to be full of electrons. To get a full shell, atoms will take or give up electrons to other atoms or share electrons with another atom. When this happens, a chemical reaction has taken place and a chemical bond has formed.

To better understand this, let us look at the sodium atom. Sodium has eleven electrons. Its first shell is full with two electrons, and **its** second shell is full with eight more electrons, making ten electrons. However, since sodium has eleven electrons, it has one all alone in the third shell. To become more stable, sodium will easily give up that one electron so it will have a full shell. The extra electron will go to another atom that needs one electron to have a full shell.

(Adapted from http://edhelper.com/ReadingComprehension_37_152.html)

A/ COMPREHENSION / INTERPRETATION. (08 PTS)

1. **The text is :** a- narrative b- expository d- argumentative (0,5 PT)
2. **The appropriate title to this text is :** (01 PT)
 - a. Electrons and Atoms
 - b. How do Chemical Reactions happen?
 - c. Sodium reactions.
3. **Say whether the following statements are true or false according to the text.** (02 pts)
 - a. Chemical reactions may happen spontaneously.
 - b. Plants use photosynthesis to chemically change energy from the sun into sugar.
 - c. Taking or leaving electrons lead to new substances.
 - d. The sodium has eleven electrons; three are in the third shell.
4. **Answer the following questions according to the text.** (03 PTS)
 - a. What is a shell ?
 - b. How does a chemical reaction happen? (be brief)
 - c. How many electrons does sodium have? _____
5. **What or who do the underlined words refer to in the text?** (1,5pts)
 - a- they (§1)
 - b- it (§1).....
 - c- its (§3).....

B/ TEXT EXPLORATION. (07 PTS)

1. **Find in the text the words whose definitions follow** (01 PT)
 - a. encircled = (§2)
 - b. stop (§2)
2. **Find in the text words opposite in meaning to :** (01 PT)
 - a. worse ≠ (§3)
 - b. empty ≠ (§3)
3. **Put the verbs between brackets in the correct form.** (1.5 PTS)
 - If you (mix) oxygen with hydrogen, you (get) water.
 - What (happen) to you if you (put) sodium on the tip of your tongue ?
 - Take it for granted that I (call) you if I (fly) to Egypt tomorrow..
4. **Fill each gap with one of the following words :** (2 PTS)

kinds – mix - element - Reaction

A chemical can happen when you..... two or more chemical elements together. A chemical is made of only one kind of atom. There are more than 100 different of atoms. Atoms are much too small to see.
5. **Mark the stress on the following words :** (1.5 PTS)

Chemical - Chemistry – Astrology - Etymology – etymological - photosynthesis

PART TWO WRITTEN EXPRESSION (05 points)

Choose one of the following topics

Topic 01: your school life is full of scientific experiments. In no more than 15 lines, tell us about an experiment you did or saw.

Use the following points :

- Introduce the experiment / observation
- Your hypothesis
- Describe the experiment
- Your achievement.

Topic 02:

Suppose that you were in a dilemma. In no more than 15 lines, write a letter to an agony aunt; in which you seek for help.

Use the following notes:

- Introduce yourself: name / age/ occupation.
- Introduce and explain your problem.
- State your difficulties and situations.
- Ask for help and advices.