

This Exam Includes Two Exercises. It Is Inscribed On Seven Pages Numbered from 1 to 7.
The Use of a Non-programmable Calculator Is Allowed.

مسابقة في مادة الثقافة العلمية - مادة الكيمياء

المدة: ساعة واحدة

(انكليزي)

الاسم:

الرقم:

Answer the Following Two Exercises:

Exercise 1 (10 points)

Antibiotics

The misuse of antibiotics induces often to an over consumption that leads to harmful effects on the health .

This class of medicinal drugs, very effective against the microorganisms and the bacteria, is inactive against all kind of viruses.

Even though the prescription of Augmentin[®] to treat throat infections, this medicinal drug does not have any effect on viral infections like rum or the rhinopharyngitis.

Moreover, every treatment with antibiotics should not be stopped even though the patient feels well and he/she has the impression to be recovered. This may develop and may accelerate the resistance of bacteria.

Antibiotics are accused to be responsible for the sensation of fatigue, but this is a myth! In fact, this fatigue is due to the huge energy consumption by the organism, to defend and to fight against the infections, that makes the patient very exhausted...

www.bloc.com/santé-médicaments

Questions:

1. Referring to the text , answer the following questions:

1.1. Why the duration of treatment by an antibiotic should be respected?

1.2. Indicate whether Augmentin[®] is effective against any type of infection.

1.3. What is the cause of the sensation of fatigue during the consumption of antibiotics?

2. Answer by true or false:

2.1. Antibiotics are classified into narrow spectrum antibiotics and broad spectrum antibiotics.

2.2. Broad spectrum antibiotic is prescribed for specific micro-organism.

2.3. The extended treatment by a broad spectrum antibiotic has undesirable effect since it killed some beneficial bacteria for the body.

3. In case of a severe bacterial infection, a treatment by the three following medicinal drugs, Amoxicilin[®], Advil[®] and antipyretic like Panadol[®] is sometimes recommended.

3.1. **Antibiotic** is a drug used to:

- a) eliminate fever
- b) eliminate sever pain
- c) eliminate the inflammation

3.2. **Copy and complete** the following table with the convenient word:

	Class of the medicinal drug
Advil[®]	
Panadol[®]	
Amoxicilin[®]	

- antibiotic
- anti-inflammatory
- analgesic

3.3. Cortisone[®] is an steroidal anti-inflammatory .

Choose the correct answer:

Among the side effects of Cortisone[®]:

- a. Fluid retention, unwanted hair, depression.
- b. Hypokalemia, obesity, hypertension.

4. A new study in Lebanon shows an increase in the consumption of tranquilizers and anti-depressants.

Match each item in column A to its corresponding item in column B

Column A

- a. Anxiety
- b. Continuous sadness , loss of interest
- c. Restlessness
- d. Crying spells

Column B

- i. Anti-depressants
- ii. Tranquilizers

Exercise 2 (10 points)

Weight Loss

To function normally, the body needs a steady supply of energy. Some of this energy must come from glucose, which is needed to fuel the brain.

Between meals, the breakdown of glycogen provides glucose and the breakdown of stored fat meets other energy needs.

However, if energy stores are not refilled then the body weight will decrease.

If no food is eaten for more than several hours, glycogen stores can provide glucose. Since these stores are limited, so glucose is also supplied by the breakdown of small amounts of body protein to yield amino acids, which then can be used to make glucose via gluconeogenesis....

A loss of more 30% of the functional body's proteins reduces the strength of the muscles required for breathing and heart function, depresses immune function and causes a general loss of organ function.

Nutrition Science and Application

Questions:

1. Referring to **the text**, **answer** the following questions:

1.1.Indicate the two sources of energy between meals.

1.2.Copy and **complete** the following word equation with the following terms:

Glucose – amino acid

Protein $\xrightarrow{\text{break down}}$ $\xrightarrow{\text{Gluconeogenesis}}$

1.3.Pick out the effects of the loss of the functional body's protein.

2. **Choose** the correct answer:

The chemical elements that constitute glucose are:

- a) Carbon, hydrogen, oxygen
- b) Carbon, nitrogen, phosphor

3. For most people, about 60% to 70% of the body's total energy expenditure is used for basal metabolism.

Choose the correct answer:

3.1. The basal metabolism is:

- a- The basic metabolic processes which keep the body alive.
- b- The energy needed for physical activity.

3.2. The factor that affects the basal metabolism are:

- a- physical activity and gender
- b- weight, age, and thermogenic effect.

4. **Choose**, from the following terms, the one that is **not** a functional role of protein:

- a. Enzymatic activity
- b. Defense
- c. Anti-oxidant

Nutrition Facts of Broccoli Serving Size: one cup (91 g)	<table border="1"> <tr> <th colspan="2">Energy value per 1g</th> </tr> <tr> <td>Carbohydrates</td> <td>4 Kcal</td> </tr> <tr> <td>Fats</td> <td>9 Kcal</td> </tr> <tr> <td>Protein</td> <td>4 Kcal</td> </tr> </table>	Energy value per 1g		Carbohydrates	4 Kcal	Fats	9 Kcal	Protein	4 Kcal
Energy value per 1g									
Carbohydrates	4 Kcal								
Fats	9 Kcal								
Protein	4 Kcal								
Energy value:28 Kcal Fat 0 g Carbohydrates 6 g -Dietary fiber 2 g -Sugars 4 g Protein 3 g									

Document -1

5. In order to promote weight loss, diet must be low in energy. Broccoli, low in calories, supplies loads of nutrients.

Referring to **Document -1.**

5.1.

- a- **Calculate** the energy provided by sugar present in 91 g of Broccoli.
- b- **Calculate** the energy provided by proteins present in 91g of Broccoli.
- c- **Deduce** that the energy value provided by 91g of Broccoli is 28 Kcal.

5.2. **Pick out** the nutrient that lowers the risk of constipation.