

This Exam Includes Two Exercises. It Is Inscribed on 2 Pages Numbered 1 and 2. The Use of A Non-programmable Calculator is Allowed.

Answer The Two Following Exercises:

Exercise 1 (10 points)

A Balanced Diet

A balanced diet is the one that gives your body the nutrients it needs to function properly... By following a balanced diet, you can reduce the risks of many chronic diseases including heart disease, diabetes, osteoporosis and high blood pressure... If daily meals contain a variety and adequate quantities of the six groups of food, they will be considered balanced... The nutrients present in the diet serve for growth and maintenance, supply of energy or regulation. Energy is required by human body for basal metabolism and physical activity. A balanced diet contains, among others, milk and dairy products.

The daily recommended amounts of some nutrients in a balanced diet are:

Proteins: 98 g

Lipids: 67g

Carbohydrates: 264 g

Document-1

Given: 1g of carbohydrates gives 4 Kcal

1g of protein gives 4 Kcal

1g of lipid gives 9 Kcal

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

1.1. Pick out the statement that explains how meals could be considered balanced.

1.2. Indicate the two energy requirements of humans.

1.3. List two chronic diseases, the risks of which can be reduced when a balanced diet is followed.

2. Match each of the items of column I to the corresponding item(s) of column II.

Column I

- 1- Carbohydrates
- 2- Vitamins
- 3- Proteins
- 4- Lipids

Column II

- a- growth and maintenance
- b- source of energy
- c- regulatory and protection

3. List three factors that should be taken into consideration upon planning a balanced diet.

4. Lactose is the major sugar found in milk. For many people, the digestion and absorption of lactose is a problem.

4.1. Name this problem.

4.2. Give the cause and one symptom for this problem.

4.3. Write the word equation of the synthesis reaction of lactose.

5. Calculate, referring to **document-1**, the daily energy value provided by this balanced diet.

Exercise 2 (10 points)

Opioids

Opioids are a wide range of natural and manufactured compounds for pain relief.

There are three main groups of opioid medications: natural, semi-synthetic and synthetic.

Opioids are primarily used to manage different types of pain. They are also used to control moderate to severe cough or diarrhea and to treat addiction to other opioids, including illicit drugs such as heroin.

Like all drugs, opioids have benefits and risks. Nausea, vomiting, drowsiness, dry mouth and constipation... are common side effects associated with opioids. The overconsumption of opioid medications can lead to serious health consequences and addiction.

... To be sold as an over-the-counter drug, an opioid preparation must contain a very low dose of opioid in combination with two or more other medicinal ingredients. Examples of over-the-counter opioid products include cough medications and analgesics containing a low dose of codeine combined with paracetamol, acetylsalicylic acid or caffeine...

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1. Referring to the text, answer the following questions:
 - 1.1. Define opioids.
 - 1.2. Deduce the class of medicinal drugs to which opioids belong.
 - 1.3. Pick out two diseases controlled by opioids.
 - 1.4. List the three main groups of opioid medications.
 - 1.5. Specify whether each of the following propositions is true or false:
 - 1.5.1. The medicinal drug used to treat cough contains opioid as the only active ingredient.
 - 1.5.2. The overconsumption of opioid does not represent any remarkable risks.
2. Analgesics are classified into three groups: narcotic, antipyretics and anti-rheumatics. Associate to each group one of the following domains of therapeutic use:
reduce fever; reduce joints inflammation; eliminate severe pain.
3. Give the trade name of a drug containing paracetamol and that of another one containing acetylsalicylic acid.
4. Copy and complete the table below:

Trade name	Active ingredient	Therapeutic effect	Side effect
Advil [®]			
Maalox [®]	magnesium hydroxide and aluminum hydroxide		
Cortisone [®]	Cortisone		

Exercise 1 (10pts)

A Balanced Diet

Part of the Q	Answers	Mark
1.1	The daily meals are considered balanced when they contain a variety and adequate quantities of the six groups of food.	1
1.2	The two energy requirements are: basal metabolism and physical activity.	1
1.3	Heart disease <u>or</u> diabetes <u>or</u> osteoporosis <u>or</u> high blood pressure	1
2.	1-b; 2- c; 3 – a and b; 4-b	1.25
3	5-The factors that should be taken into consideration are: <ul style="list-style-type: none">• Cost and availability.• Variety and appearance.• Consumer preferences. <u>or</u>• Religious and culture food habits.	1.5
4.1	Lactose intolerance	0.75
4.2.	It is caused by the lack of enzyme lactase. One symptom is diarrhea or nausea or fullness or gases	1.5
4.3.	Glucose + galactose → lactose + water	1
5.	The energy value = $(264 \times 4) + (98 \times 4) + (67 \times 9) = 2051$ Kcal	1

