

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD  
UNIVERSITY OF MALTA, MSIDA  
MATRICULATION EXAMINATION  
ADVANCED LEVEL  
MAY 2013

<b>SUBJECT:</b>	HOME ECONOMICS AND HUMAN ECOLOGY
<b>PAPER NUMBER:</b>	I
<b>DATE:</b>	29 <sup>th</sup> April 2013
<b>TIME:</b>	9.00 a.m. to 12.00 noon

**ANSWER ANY FIVE QUESTIONS (20 marks each)**

**Question 1**

A middle aged bachelor has just inherited some money after his parents' death. Friends are advising him that he should invest his money in bank accounts or a life assurance policy.

- i) Describe **THREE** different types of bank accounts available locally in which the bachelor can invest his money. Identify the advantages and disadvantages each account poses to him. (6 marks)
- ii) Some bank accounts offer a *chip and pin* debit card facility. Explain how this card works and outline **TWO** advantages of this card for the bachelor. Outline **THREE** precautions the bachelor needs to follow when owning such a debit card. (1, 2, 3 marks)
- iii) Outline the difference between *life assurance* and *life insurance* policies. Explain **TWO** benefits for the bachelor when investing in a life assurance policy. (2, 1 marks)
- iv) The bachelor sought professional assistance to guide him intelligently in the investment of his newly acquired assets. The financial planner has suggested he should have a *mixed portfolio*, investing in *mutual funds* (collective investment schemes), *shares* and *bonds*, and a retirement plan.
  - a) Explain the italicised terms. (2 marks)
  - b) Outline **TWO** advantages and **ONE** disadvantage for the bachelor when investing in shares and a retirement plan. (2, 1 marks)

**Question 2**

Decent housing strengthens communities and provides a better setting in which to raise children. In recent years, the housing affordability problem in the Maltese Islands has become more pronounced. This inevitably results in first-time buyers, including families with special needs, gradually feeling pushed out of the housing market with *social housing* assistance sometimes being the only safety net available for some households.

- i) Define *social housing* and outline the purpose of such assistance. (1, 3 marks)
- ii) Outline **FOUR** factors that have contributed to the increase in housing prices in Malta. State **THREE** actions undertaken by the state to assist first-time household buyers. (2, 3 marks)

- iii) A wheel-chair bound man and his partner are looking for an accommodation to start a family. Identify **FIVE** housing requirements this couple should consider to minimise their mobility difficulties. (5 marks)
- iv) A couple, who has just bought their first home together, are considering installing a security system for their fully-detached bungalow. Describe **THREE** electronic and **THREE** non-electronic security systems the couple can install or include. (3, 3 marks)

### Question 3

A male nurse will soon be reaching retirement age. Following retirement, he has been given the possibility to work on a reduced hour contract.

- i) Outline **TWO** benefits of working beyond retirement age for:
  - a) the nurse;
  - b) the nation. (2, 2 marks)
- ii) If the nurse decides **NOT** to work beyond retirement age, describe how he can still make use of his professional expertise, by contributing towards:
  - a) his family; and
  - b) the local community. (3, 3 marks)
- iii) The nurse would like to develop new personal skills. Outline provisions that are provided by the state and non-governmental organisations that the nurse can avail himself of. (2, 2 marks)
- iv) On 15<sup>th</sup> June, the world commemorates World Elder Abuse Awareness Day. Outline **FOUR** different types of elderly abuse that can take place, giving specific examples. Outline the causes of such abuse, and the action that can be taken to stop this abuse. (6 marks)

### Question 4

Though recognition of innate dignity and equal rights of all human beings is the foundation of freedom, justice and peace in the world; in 1948 the United Nations proclaimed the declaration of human rights as a common standard for all nations to abide to in order to promote respect for these rights and freedoms.

- i) Explain the above statement. (1 mark)
- ii) List and justify **TWO** of these rights and **TWO** responsibilities pertaining to adults and their lifestyle. (2, 2 marks)

- iii) Adulthood brings with it different situations; single parenthood and unemployment are two of the most common situations an adult can find him/herself in.
- Illustrate **TWO** benefits/allowances and **TWO** services and/or other assistance which are mainly targeted at single parents and/or unemployed people. Explain why **EACH** of these is important for the receiver. (1, 1, 2, 2 marks)
  - Outline what the abbreviation **E.T.C.** stands for. Describe the main role of this entity. (1, 1 mark)
- iv) Nowadays, a great emphasis is being put on *lifelong education*.
- Explain the italicised term. Highlight **TWO** advantages and **TWO** disadvantages of such an education. Give **ONE** reason for **EACH** of your answers. (1, 2, 2 marks)
  - Describe **TWO** provisions for lifelong education for adults, provided by the state and local authorities. (2 marks)

### Question 5

The *greenhouse effect* and *global warming* are two inter-related issues which are often in the news due to their environmental impacts.

- Explain the scientific principles involved in the greenhouse effect, which subsequently lead to global warming. List **TWO** gases which contribute to global warming and give **ONE** source of **EACH**. (3, 1, 1 mark)
- Describe **THREE** impacts which the greenhouse effect and global warming are having on the world. (3 marks)
- Illustrate **THREE** strategies to counteract the greenhouse effect and the global warming phenomenon at:
  - a national level;
  - an international level. (3, 3 marks)
- Nowadays, all new structural projects need to undergo an *Environmental Impact Assessment*. Define the italicised term and highlight its function. (1, 1 mark)
- Describe **TWO** energy-saving schemes that are currently being offered by the local government. (2 marks)
- Families tend to disregard the amount of air pollution they generate in their own homes. Outline **FOUR** air pollutants generated within a home. (2 marks)

*Please turn the page.*

**Question 6**

With the increased use of *plastic money*, *credit facilities* and *e-banking services*, methods of payment and financial transactions have changed radically over the last two decades.

- i) Define the italicised terms, giving **TWO** different examples of each. (3, 3 marks)
- ii) Outline the basic features and functions of *E.P.O.S.* and *barcodes* in retailing. Give **TWO** benefits of these two systems for **EACH** of the following:
  - a) the retailers;
  - b) the consumers. (2, 2, 2 marks)
- iii) Consumers are availing themselves more of credit facilities being advertised by local businesses. Account for such an increase, and outline **TWO** advantages and **TWO** disadvantages of using credit for the consumer. (1, 2, 2 marks)
- iv) Some consumers have to resort to illegal credit systems. Outline the danger of such an illegal system, and explain what help is locally available for victims of this abusive system. (1, 2 marks)

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<b>SUBJECT:</b>	HOME ECONOMICS AND HUMAN ECOLOGY
<b>PAPER NUMBER:</b>	II
<b>DATE:</b>	30 <sup>th</sup> April 2013
<b>TIME:</b>	4.00 p.m. to 7.00 p.m.

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**ANSWER ANY FIVE QUESTIONS (20 marks each)**

**Question 1**

The class of nutrients known as lipids is a family of compounds that includes *triglycerides*, *phospholipids* and *sterols*.

- i) Define the italicised terms. (3 marks)
- ii) Give the chemical elements of fatty acids, and draw the physical structure of a saturated and a polyunsaturated fatty acid. Outline the main chemical and physical structural differences between these two types of fatty acids. (1, 2, 2, 2 marks)
- iii) With the aid of diagrams, highlight the difference between trans- and cis- fatty acids. (2, 1 mark)
- iv) Explain the process of hydrogenation. List **ONE** advantage and **ONE** disadvantage of this process. (1, 1 mark)
- v) Describe in detail the physical and chemical processes involved in the digestion of lipids. (5 marks)

**Question 2**

An adult manual labourer who suffers from *hypertension* is recovering from *gastroenteritis*. He has been told to eliminate certain food items from his diet for a few days.

- i) Define the italicised medical conditions and describe their aetiology. (2, 2 marks)
- ii) Outline, giving reasons, which food items the labourer should eliminate from his diet when recuperating from gastroenteritis. (2 marks)
- iii) Explain how the nutritional needs and daily recommended intakes of an adult manual labourer differ from those of a sedentary worker. (5 marks)
- iv) Plan a two-course meal and drink which the manual worker can consume during lunch at his work place. Outline at least **EIGHT** nutritional factors, and **FOUR** other non-nutritional factors you would consider when preparing this lunch. (3, 4, 2 marks)

### Question 3

Diet has always played a vital role in supporting a healthy lifestyle; consequently updated national dietary guidelines are issued periodically to help fulfil this role.

- i) Justify the above statement. Define and give the function of *national dietary guidelines*. Explain the difference between Food Guides and Dietary Guidelines. (1, 1, 1, 1 mark)
- ii) Define and describe in detail the *Food Guide Pyramid*. Accompany your description with a well-labelled diagram. Illustrate the main use of this Pyramid. (1, 2, 2, 1 mark)
- iii) The CINDI dietary guide summarises 12 key steps for action towards maintaining a healthy lifestyle. Explain and justify the following key steps:
  - a) Eat a nutritious diet based on a variety of foods originating mainly from plants, rather than animals.
  - b) Eat bread, grains, pasta, rice or potatoes several times per day.
  - c) Control fat intake (not more than 30% of daily energy) and replace most saturated fats with unsaturated vegetable oils or soft margarines.
  - d) Replace fatty meat and meat products with beans, legumes, lentils, fish, poultry or lean meat.
  - e) If alcohol is consumed, limit intake to no more than 2 drinks (each containing 10g of alcohol) per day. (10 marks)

### Question 4

*Osteoporosis, osteomalacia* and *ricketts* are bone conditions that can be related to nutrient deficiency.

- i) Explain the difference between these three bone conditions, describing their aetiology. Outline in which specific individual group **EACH** condition is most prevalent. (3, 3 marks)
- ii) Outline **TWO** dietary and **TWO** non-dietary factors that could delay the development of osteoporosis. Explain how an individual can test for this bone condition. (2, 2, 1 marks)
- iii) Outline the scientific principles underlying the following statements about calcium.
  - a) Vitamin D helps the absorption of calcium in the body.
  - b) The recommended daily allowance of calcium varies according to age.
  - c) Too much calcium can lead to heart failure.
  - d) Muscular cramps can be a symptom of low calcium in the body. (4 marks)
- iv) Lactose intolerant individuals are at risk of calcium deficiency, due to their lack of consumption of dairy products rich in this vital mineral.
  - a) Describe the aetiology of lactose intolerance. (2 marks)
  - b) Explain how a lactose intolerant child can ensure an adequate intake of calcium, outlining specific food sources the child can consume. (3 marks)

<b>Question 5</b>
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One of the greatest challenges faced by man has been maintaining a consistent and safe food supply. Over the years, people faced starvation in seasons with poor yields, only to have excess harvest go to waste in more productive seasons. This led to *food preservation*.

- i) Define the italicised term and in brief, explain the effects of preservation on food. List and explain **THREE** advantages of food preservation. (1, 1, 3 marks)
- ii) *Salting* and *pickling* are two of the oldest food preservation techniques, whilst *irradiation* and *modified atmospheric packaging* are two recent techniques which have only emerged in the past decade. Define and outline the basic scientific principles involved in **EACH** of the techniques. (2, 2, 2, 2 marks)
- iii) Outline **FOUR** common concerns of food preservation. (4 marks)
- iv) Freezing in the food industry is of extreme importance. Highlight its importance and describe **TWO** freezing techniques used in the food industry. (1, 1, 1 mark)

<b>Question 6</b>
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Forming part of an eco-food consumption movement, you are trying to convince your colleagues to consume *wholegrain foods* rather than *refined grain foods* and to cut down on the consumption of energy by using a *pressure cooker*.

- i) Explain the main steps involved in the production of white polished rice, outlining the scientific principles that will deteriorate the nutritional value of the grain. (4 marks)
- ii) Outline **SIX** diet-related conditions that can be prevented by consuming unrefined brown rice. (3 marks)
- iii) Organic rice is available in local shops. Describe what organic rice is and give **TWO** benefits of organic rice for the:
  - a) consumers;
  - b) farmers;
  - c) environment. (1, 2, 2, 2 marks)
- iv) Pressure cooking cuts down on the use of energy consumption. Explain how a pressure cooker works and how energy is conserved inside the pressure cooker. (2, 1 marks)
- v) Outline **THREE** safety precautions that one should follow when using a pressure cooker. (3 marks)