

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD
UNIVERSITY OF MALTA, MSIDA
MATRICULATION EXAMINATION
ADVANCED LEVEL
MAY 2016

SUBJECT:	HOME ECONOMICS AND HUMAN ECOLOGY
PAPER NUMBER:	I
DATE:	26 th April 2016
TIME:	4.00 p.m. to 7.05 p.m.

ANSWER ANY FIVE QUESTIONS (20 marks each)

Question 1

Adolescence is a stage in life that brings a lot of *psychological, emotional, physical* and *social* changes.

- i) For each of the **FOUR** italicised changes experienced by youngsters, suggest **TWO** practical examples. (2, 2, 2, 2 marks)

- ii) Explain the importance of having support during this phase in life. Outline **TWO** ways how guardians can provide support to their young adolescents. (2, 2 marks)

- iii) Various support systems, both at the national and the regional level are available to help adolescents. Outline **TWO** governmental and **TWO** non-governmental entities where adolescents can seek assistance. For **EACH** entity outlined, describe its role. (2, 2, 2, 2 marks)

Question 2

The Paris Summit of 2015 concluded somewhat successfully where, though not legally binding, all countries committed themselves to work together to reduce global warming and climate change.

- i) Explain in detail the terms *global warming* and *climate change*. For **EACH** concern, state **FOUR different** contributory factors. (2, 2, 2 marks)

- ii) Discuss **TWO** different impacts of global warming on **EACH** of the following:
 - a. the natural environment;
 - b. human beings;
 - c. the physical human-built environment;
 - d. the world's supply of potable water. (2, 2, 2, 2 marks)

- iii) Illustrate **THREE** strategies to counteract the global warming and climate change phenomena at:
 - a. a national level;
 - b. an international level. (3, 3 marks)

Question 3

A mother, who is keen on healthy cooking, was watching a television programme which advertised a *steam cooker*.

- i) Outline **FOUR** benefits of teleshopping for:
 - a. the consumer;
 - b. the retailer. (2, 2 marks)
- ii) List **FOUR** disadvantages of teleshopping and explain how legislation protects consumers when purchasing items via such retailing systems. (2, 1 mark)
- iii) Describe **TWO** other methods of shopping for a steam cooker and for **EACH** method outlined, give **TWO** advantages and **TWO** disadvantages. (1, 2, 2 marks)
- iv) Outline **FIVE** safety features and safety marks the consumer should look out for when buying the steam cooker to ensure that it is safe to use and is in accordance with EU law. (5 marks)
- v) Briefly describe **SIX** steps how the consumer should care for this labour saving device. (3 marks)

Question 4

Pamela and Mark have decided to start looking for accommodation. The couple are still considering whether to rent or to buy a property.

- i) List **TWO** advantages and **TWO** disadvantages of:
 - a. renting;
 - b. buying a property. (2, 2 marks)
- ii) The couple decided to seek help from an estate agent. Define *estate agent* and outline **THREE** main roles of an estate agent. (2 marks)
- iii) Most of the couple's friends and relatives are homeowners. Pamela and Mark decided to ask them whether they know of any suitable properties. Give **TWO** advantages and **TWO** disadvantages if the couple obtains information about dwellings from:
 - a. friends and relatives;
 - b. an estate agent. (2, 2 marks)
- iv) Whilst looking at different properties, Pamela and Mark came across the terms *ground rent* and *freehold*. Explain in detail, the differences between the italicised terms. (2 marks)

- v) The couple was advised to invest in a home insurance policy to safeguard from the unexpected. Outline the **THREE** main types of home insurances available in Malta and state **TWO** factors that the couple should consider when choosing their home insurance policy. (3, 1 mark)
- vi) The couple is very environmental conscious. Outline **FOUR** ways how the house can be heated and cooled in an efficient eco-sustainable manner. (4 marks)

Question 5

Consumers buying fresh fruits and vegetables have various retail outlets options to buy from.

- i) List **FOUR** different shopping outlets fruit and vegetables can be bought from and for **EACH** give **TWO** different advantages and **TWO** different disadvantages. (2, 4, 4 marks)
- ii) Sustainability is becoming a major concern for the Maltese and global society.
- a. Briefly explain **EIGHT** ways how a consumer can be sustainable when purchasing and preparing fruit and vegetables. (4 marks)
- b. Outline **FOUR** benefits for the individual and for the nation, when food is purchased in a sustainable manner. (2 marks)
- iii) A family had roast chicken and boiled vegetables for lunch. They have leftovers. Outline how these leftovers can be used to prepare **FOUR** new meals. Highlight the ingredients that will be added to these leftovers in order to make these new meals. (4 marks)

Question 6

A family of two adults and two children decided to foster a young child with a visual impairment.

- i) Define the term *fostering*. List **TWO** types of fostering. (1, 1 mark)
- ii) Outline **TWO** differences and **TWO** similarities between *fostering* and *adoption*. (1, 1 mark)
- iii) Outline briefly the procedure for this family to become a foster family. Explain **ONE** way how fostered children can be monitored. (2, 1 mark)
- iv) For **EACH** of the following, describe **TWO** benefits of fostering for the:
- a. fostered child;
- b. fostering family. (2, 2 marks)
- v) List **TWO** government entities and **TWO** non-governmental organisations, which can offer their services to this fostered child and the rest of the family. Describe **ONE** service offered by **EACH** of the above-mentioned entities. (2, 4 marks)
- vi) Outline **SIX** possible modifications to the house, and changes in interior decoration, that can be made to cater for the fostered child's sight problems, ensuring safe independent living. (3 marks)

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MAY 2016

SUBJECT:	HOME ECONOMICS AND HUMAN ECOLOGY
PAPER NUMBER:	II
DATE:	27 th April 2016
TIME:	4.00 p.m. to 7.05 p.m.

ANSWER ANY FIVE QUESTIONS (20 marks each)

Question 1

Genetic engineering and irradiation are two food biotechnologies highly discussed among consumers and scientists.

- a. Define *genetic engineering* and explain the basic scientific principles involved in the production of food using this technique. (1, 3 marks)
- b. Explain **THREE** scientific principles involved in *irradiation*. (1½ marks)
- c. Outline **TWO** positive impacts of genetic engineering of crops and **TWO** positive impacts of food irradiation for:
 - i. food producers;
 - ii. world population. (2, 2 marks)
- d. *Hydroponics*, *aquaculture* and *organic farming* are new food production methods that have recently been introduced in Malta.
 - i. Explain *hydroponics*, *aquaculture* and *organic farming*. For **EACH** method, outline **TWO** local food products that are being grown/reared using this method. (1½, 3 marks)
 - ii. For **EACH** of the following, give **TWO** benefits of **EACH** food production method mentioned in (i):
 - a. The consumer;
 - b. The environment. (2, 2, 2 marks)

Question 2

Much of the food we eat is cooked and all cooking methods involve the transfer of heat.

- a. Explain the benefits of cooking food. (3 marks)
- b. Outline the **THREE** different methods of heat transfer employed in cooking and describe how food is cooked in each method. (3, 3 marks)
- c. For **EACH** of the following situations, explain which cooking method would be most suitable and practical. Justify your answer.
 - i. An old person waiting to have a denture fitted.
 - ii. Lunch for a manual worker to take on a work site.
 - iii. An individual who is on a low calorific diet.
 - iv. A mother with little time to cook a hot dish for the family supper. (4 marks)

Many Maltese households own a microwave oven.

- d. Explain how food is cooked in a microwave and list **FOUR** benefits of owning a microwave. (2, 2 marks)
- e. Choose **THREE** of the following precautions and explain why they should be followed when using a microwave. Outline the scientific principle underlying your explanation.
 - i. Do not use metal containers in a microwave.
 - ii. Always place a wooden mixing stick teaspoon when heating water in a cup or water jug.
 - iii. A microwave is not recommended to warm baby formula milk in.
 - iv. Do not hard boil an egg in a microwave.
 - v. Use oven gloves when removing food cooked or heated in a microwave. (3 marks)

Question 3

Both micronutrients and macronutrients are vital for different body functions.

- a. Outline **FOUR** chemical names of micronutrients required for each of the following functions in the body:
 - i. Healthy blood;
 - ii. Strong bones and teeth. (2, 2 marks)
- b. For **EACH** micronutrient mentioned in (a), list another function of the nutrient in the body and **TWO** food sources rich in the nutrient. (4, 4 marks)
- c. Vitamin A was the first fat-soluble vitamin to be recognised, and together with its *precursor* beta-carotene, it still intrigues researchers with its diverse roles. Define *precursor* and highlight the different forms of vitamin A. (1, 1 mark)

- d. Explain how the different forms of vitamin A are converted and activated in the body. (3 marks)
- e. Some vitamins have absorption-enhancing factors. Explain this in the following situations:
- Vitamin D and Calcium in growing children;
 - Vitamin C and Iron in vegans. (3 marks)

Question 4

Food spoilage can be defined as a disagreeable change in a food's normal state. Such changes can be detected by smell, taste, touch or sight.

- a. List and describe **FIVE** factors (other than micro-organisms) that cause food spoilage and give an example for each. (5 marks)
- b. Micro-organisms, specifically bacteria, moulds and yeast, are the major causes of food spoilage. Explain how **EACH** of these micro-organisms spoils food. (2, 2, 2 marks)
- c. Describe **THREE** different food processes that food can undergo when being processed, so as to reduce food spoilage. (3 marks)
- d. In food production, micro-organisms can be actually beneficial and used in certain food processes to produce edible foods like yoghurt, blue veined cheeses and cider. Choose **TWO** of the above-mentioned foods and explain the process, including the scientific principles, for **EACH**. (3, 3 marks)

Question 5

Maintaining an appropriate and healthy weight helps ensure a better life to human beings.

- a. Define *energy balance* and describe **TWO** effects of an energy imbalance in the body and its implications on human health. (1, 2 marks)
- b. Outline the criteria by which a healthy body weight can be defined. Explain how a person's body weight can be assessed and monitored over time. (3, 2 marks)
- c. Highlight the changing energy needs with regard to level of activity, rate of growth, and body size in **EACH** of the following life cycle stages:
- babies 0 to 1 year of age;
 - toddlers 1 to 2 years;
 - toddlers 2 to 3 years;
 - children 4 to 5 years. (1, 1, 1, 1 mark)

- d. Describe, with reasons, the changing energy needs of a:
- i. pregnant mother;
 - ii. lactating mother. (1, 1 mark)
- e. National efforts are being made to address the overweight and obesity status across the various Maltese age groups. Identify **FOUR** different national projects (specifying the target group) that have been launched to deal with obesity. Outline **TWO** economic and **TWO** social benefits of such projects. (4, 2 marks)

Question 6

Many Maltese people like rabbit meat and in the Maltese cuisine it is prepared in different ways. Rabbit meat consumption is gaining popularity even worldwide.

- a. Explain why rabbit meat is considered to be one of the healthiest meats available for human consumption. (6 marks)
- b. Outline **EIGHT** modifications that can be made to the following ingredients of a traditional Maltese rabbit stew recipe, bringing it in line with the national nutritional guidelines. Explain the benefits of the modifications made.

Traditional Maltese Rabbit Stew

Ingredients:

2 rabbits	3 tbsps tomato paste
500g belly of pork meat	2 carrots
300ml red wine	8 potatoes
2 onions	salt and pepper
4 garlic cloves	3 tbsps oil
8 bay leaves	250g canned peas
400g canned tomato pulp	

(4 marks)

- c. A young couple is inviting family and friends over for a *fenkata* (rabbit feast) party. Outline **FIVE** ways how rabbit meat can be prepared in various finger foods for this occasion. (5 marks)
- d. Rabbit meat is a high protein rich food. Describe the digestion and absorption of protein in the body. (5 marks)