



SUBJECT:	Home Economics and Human Ecology
PAPER NUMBER:	I
DATE:	30 th August 2023
TIME:	9:00 a.m. to 12:05 p.m.

ANSWER ANY FIVE QUESTIONS (20 marks each)

1. According to the National Statistics Office, Malta's at risk of poverty or social exclusion rate rises to 20%. According to a survey carried out by the European Statistics on Income and Living Conditions, 2021 had an increase of 0.4 % from previous year, in the at risk of poverty or social exclusion rate (AROPE).

(Malta Independent, September 2022)

- Define the terms poverty and social exclusion. (2)
- Outline **THREE** causes of poverty and **THREE** causes of social exclusion. (6)
- Identify **FOUR** groups of people who are at risk of poverty. (2)
- List **FOUR** state support service agencies. (2)
- These local state support agencies carry out assessment. What does this involve? (2)
- Explain, giving **TWO** reasons, why the process of assessment is important. (2)
- Highlight the main role of The Commissioner for Children and of Jobsplus to help lower the poverty rate in Malta. (4)

(Total: 20 marks)

2. Ageing is the process of becoming older. Late adulthood is transited into retirement age and into an elderly citizen.

- Describe what retirement is. (1)
- Identify **FOUR** changes in the elderly's life upon retirement. (4)
- Define, by including **TWO** features, the term active ageing. (2)
- Explain, by giving **THREE** examples, how active ageing is also important for the rest of the family members. (3)
- List **SIX** services offered by the government that enable elderly people to remain independent in their own home. (3)
- Describe the function of **THREE** services mentioned in part (e). (3)
- Explain **TWO** ways how these services promote independent living. (2)
- Highlight **TWO** ways how the community can benefit from an elderly who lives independently. (2)

(Total: 20 marks)

Questions continue on next page.

3. Adel and Mark are a married couple who work full-time. They have three children, all under the age of 10 years.
- a. State **TWO** individual and **TWO** family-based strategies that the couple can share to work for a better quality of life for all the family. (4)
 - b. Identify **FOUR** ways how Adel and Mark can manage stress to maintain good physical and mental health. (4)
 - c. Explain **TWO** ways how Adel and Mark can balance life commitments. (2)
 - d. Outline **TWO** ways how the couple can make efficient use of:
 - i. time; (2)
 - ii. energy; (2)
 - iii. money. (2)
 - e. Adel and Mark take their childrens' physical, social, emotional, and intellectual development seriously. Suggest **ONE** example how they can promote each type of development. (4)
- (Total: 20 marks)**

4. Joseph and Ruth are going to search for a dwelling which will be their family home.
- a. State **TWO** sources from where the couple can obtain information about the properties available for purchase. (2)
 - b. Outline **ONE** advantage and **ONE** disadvantage for **each** source stated in part (a). (4)
 - c. List **FOUR** economic factors that influence the type of home they will choose. (4)
 - d. Identify **THREE** ways how they can acquire the money for their new home. (3)

Joseph and Ruth have seen the house of their dreams and have decided to buy the property. They have met the notary to sign the promise of sale. However, since works on the new house will take some time, they decided to rent an apartment close to the location of their work until they can move to their new home.

- e. Explain the meaning of the following terms:
 - i. promise of sale; (1)
 - ii. deed of sale; (1)
 - iii. ground rent; (1)
 - iv. home insurance policy; (1)
 - v. life insurance policy. (1)
 - f. Highlight, by giving **TWO** reasons, why it is important to sign a lease in front of a notary when renting a home. (2)
- (Total: 20 marks)**

5. The Renewable Energy Directive sets rules for the EU to achieve its 32% renewables target by 2030. *(The European Commission)*

Two ways how to achieve this target is by installing solar water heaters and photo voltaic panels in households.

- a. Outline what renewable energy is. (1)
- b. State **ONE** advantage and **ONE** disadvantage of solar water heaters and of photo voltaic panels. (4)
- c. One global concern which triggered this Renewable Energy Directive is global warming. Define global warming. (1)
- d. List **FOUR** chemicals which contribute to global warming. (2)
- e. Identify **FOUR** effects of global warming that are being experienced in Malta. (4)
- f. Identify **FOUR** ways how a green consumer can counteract global warming when shopping from a supermarket. (4)
- g. List **FOUR** ways Maltese adolescents can help in preventing global warming. (4)

(Total: 20 marks)

6. The Urban Waste Water Treatment Directive requires member states to ensure that urban areas properly collect and treat their wastewater before this is dumped into the sea.

(Times of Malta, December 2022)

- a. State the location of the **THREE** water treatment plants in Malta. (3)
- b. Explain **THREE** uses of treated wastewater from treatment plants. (3)

Before the introduction of waste treatment plants, sewage from all Maltese households used to be dumped into the sea.

- c. Outline **TWO** disadvantages of the old system. (2)

Civic Amenity Sites are facilities where the public can bring and discard various types of bulky household waste, domestic hazardous waste, as well as recyclable materials.

(Department of Information, Malta, October 2017)

- d. Identify **FOUR** locations of Civic Amenity Sites in Malta. (2)
- e. List **SIX** items that can be disposed of at these sites. (3)
- f. Justify **TWO** reasons why Civic Amenity Sites are important. (2)
- g. How can one dispose of bulky waste if they do not have transport to carry items to Civic Amenity Sites? (1)
- h. State **THREE** examples of what happens to the bulky waste once it is disposed at the Civic Amenity Site. (3)
- i. Highlight the aim of the first WasteServ Reuse Centre, which opened in 2022. (1)

(Total: 20 marks)



SUBJECT:	Home Economics and Human Ecology
PAPER NUMBER:	II
DATE:	31 st August 2023
TIME:	9:00 a.m. to 12:05 p.m.

ANSWER ANY FIVE QUESTIONS (20 marks each)

1. The food packaging industry have been researching ways how to create innovative and new technologies for food manufacturers. Tamper-proof seals is one of these innovations.
 - a. Explain what tamper-proof seals are and justify their importance in food safety. Include **TWO** foods on which the consumers can find tamper-proof seals. (1, 1, 1)
 - b. Some consumers are concerned about the food safety of materials used in food packaging. Justify this statement, giving **FOUR** reasons for these concerns. (4)
 - c. Both food hygiene and food safety are vital aspects to take into consideration during the transportation of food. Outline **FIVE** measures which need to be adopted by food transport companies, so as to ensure that maximum food hygiene and food safety standards are attained. (5)
 - d. According to EU legislation, food packaging should provide essential information to the consumer.
 - i. Give **FOUR** reasons why proper food labelling is important. (2)
 - ii. List **SIX** types of information which the consumer would expect to find on food package. (3)
 - iii. Outline **THREE** ways how food claims and endorsements found on food labels impact the consumers' food choice and health. (3)

(Total: 20 marks)

Questions continue on next page.

2. Food spoilage at home occurs due to improper storage, lack of visibility in refrigerators, partially used ingredients and misjudged food needs.

- a. Define food spoilage and outline **THREE** types of food spoilage. (1, 3)
- b. Identify **FOUR** factors that increase the chance of food spoilage. (2)
- c. Name **TWO** types of micro-organisms, other than yeast, that cause food spoilage, and for **each** identify an important condition for growth and multiplication. (1, 2)
- d. Describe **THREE** changes involved in yeast growth and multiplication. (3)
- e. Suggest **FIVE** precautions a home cook should follow when storing food to ensure minimal food spoilage and thereby prevent food wastage. (5)
- f. Explain **ONE** strategy to minimize food spoilage when:
 - i. buying fresh vegetables from a greengrocer; (1)
 - ii. storing fresh, local milk at home; (1)
 - iii. cooking poultry. (1)

(Total: 20 marks)

3. Carbohydrates are a vital macronutrient. However, when consumed inappropriately, they may result in having negative implications on the health of an individual.

- a. Outline the **THREE** chemical elements common in all carbohydrates, and give their ratio to one another. (2)
- b. Explain how disaccharides are formed, and substantiate your explanation by providing **THREE** specific examples. Name the enzymes responsible for the chemical breakdown of **TWO** of these disaccharides. (1, 3, 1)
- c. Give a scientific justification for each of the following statements:
 - i. Young teenagers require a higher intake of carbohydrates than their parents. (1)
 - ii. Long-distance runners need to consume a good amount of carbohydrates before a marathon. (1)
 - iii. The consumption of dietary fibre can reduce the risk of diabetes. (1)
- d. Outline the chemical and physical changes that occur to the structure of carbohydrates when:
 - i. toasting bread; (2)
 - ii. boiling carrots; (2)
 - iii. baking muffins. (2)

e. Describe in detail the digestion and absorption of carbohydrates present in a high fibre home-made cereal bar. For each stage, identify the body organ and enzymes involved. (4)

(Total: 20 marks)

4. The WHO estimates that 42% of children younger than 5 years of age and 40% of pregnant women worldwide are anaemic.

[https://www.thelancet.com/journals/lanhae/article/PIIS2352-3026\(22\)00325-8/fulltext?rss=yes](https://www.thelancet.com/journals/lanhae/article/PIIS2352-3026(22)00325-8/fulltext?rss=yes)

- a. Explain what happens to a person who suffers from iron-deficiency anaemia and identify **TWO** symptoms of anaemia. (2, 1)
- b. Differentiate between haem iron and non-haem iron and identify **TWO** food sources for **each**. (2, 2)
- c. Suggest **ONE** way which can help increase the absorption of iron in the body. (1)
- d. Justify, through scientific reasoning, why the following people require a higher intake of iron:
 - i. pregnant woman. (1)
 - ii. a fourteen-year-old teenager. (1)
 - iii. a 40-year-old male who has just undergone an operation. (1)
- e. Suggest **FOUR** different iron-rich school packed lunch ideas which a parent can prepare for a primary school child. Highlight the nutritional analysis of **ONE** of the lunches suggested, explaining how the nutrients present meet the dietary needs of young children. (2, 2)
- f. Other than preparing healthy packed lunches for their children, parents must ensure that children foster healthy eating habits. Suggest **FIVE** ways how parents can achieve this. (5)

(Total: 20 marks)

5. Soybean, rapeseed, maize and cotton are amongst the genetically modified foods and feeds that were approved by the EU in April 2022.

<https://www.eurofins.de/food-analysis/food-news/food-testing-news/gmo-new-approvals/>

- a. Outline the basic scientific principle involved in the production of GMOs. (2)
- b. Provide **FOUR** justifications for using genetically modified organisms. (4)
- c. One major concern of GMOs is safety to humans and human health. Analyse **FOUR** other common concerns of GMOs. (4)
- d. Evaluate **FOUR** aspects of safety to human health which consumers are concerned about. (4)
- e. Apart from GMOs, farmers may decide to follow other food production methods, such as organic farming, aquaculture and hydroponics. Describe these **THREE** food production methods, giving **TWO** examples of food produce cultivated through these food production methods locally. (3, 3)

(Total: 20 marks)

Questions continue on next page.

6. Each year cardiovascular disease (CVD) causes 3.9 million deaths in Europe and over 1.8 million deaths in the European Union (EU). Coronary heart disease is one of these diseases.

<https://ehnhheart.org/cvd-statistics.html>

- a. Identify the **TWO** main types of cholesterol and assess their role in relation to heart health.(2)
- b. Give **TWO** food sources of **each** type of cholesterol identified in part (a). (2)
- c. Outline **TWO** positive functions of cholesterol in the body and **TWO** negative implications (other than coronary heart disease) that a daily high intake of cholesterol can lead to.(2, 2)
- d. Explain in **THREE** main steps how coronary heart disease develops. (3)
- e. Omega-3 and Omega-6 fatty acids can be beneficial to heart health.
 - i. Explain **ONE** similarity and **ONE** difference between Omega-3 and Omega-6. (1,1)
 - ii. Identify **TWO** food sources for **each** type of fatty acid. (2)
 - iii. Suggest **FOUR** benefits of consuming these omega fatty acids. (2)
- f. Give a scientific justification for the following statements:
 - i. Eating oats for breakfast may help lower blood cholesterol. (1)
 - ii. Fruits, such as carrots and oranges, may lower the risk of developing coronary heart disease. (1)
 - iii. Consuming a diet rich in foods derived from plants, rather than animals, is more beneficial to your heart's health. (1)

(Total: 20 marks)