



SUBJECT:	Home Economics and Human Ecology
PAPER NUMBER:	I
DATE:	11 th June 2021
TIME:	4:00 p.m. to 7:05 p.m.

ANSWER ANY FIVE QUESTIONS (20 marks each)

1. According to an annual EU wide survey released in December 2020, one in five people in private households in Malta were at risk of poverty and social exclusion in 2019.

(EU-SILC 2019: Material Deprivation and Monetary Poverty)

- a. Define the term poverty and give **TWO** examples which classify a person to be at risk of poverty. (1, 2)
- b. Define the term social exclusion and give **TWO** examples which classify a person to be at risk of social exclusion. (1, 2)
- c. The following three population groups are at a higher risk of poverty and social exclusion:
- unemployed persons;
 - elderly;
 - persons suffering from chronic or mental illness.

Choose **TWO** of the above-mentioned groups and for **each** write down **TWO** causes and **TWO** remedies to their poverty and social exclusion. (2, 2)

- d. Identify **FOUR** state agencies which give support services to persons who are at risk of poverty and social exclusion. (2)
- e. Explain the main role of **each** support service agency identified in part (d). (4)
- f. Support to the most vulnerable is also provided by:
- the Office of the Commissioner for the Rights of Persons with Disability;
 - the Commissioner for Children;
 - JobsPlus.

Choose **TWO** of the above entities and for **each** entity write down its function. (2, 2)

(Total: 20 marks)

Questions continue on next page.

2. In Malta there are 21 Active Ageing Centres. At these centres, the elderly have the opportunity to meet new people or old friends in a friendly atmosphere. At the Active Ageing Centres, elderly can both relax and engage in creative, social, physical, and educational activities.

- a. Explain and give **THREE** features of Active Ageing within the community. (3)
- b. List **TWO** benefits of Active Ageing within the community for:
 - i. the ageing person himself/herself; (2)
 - ii. the family members of that person; (2)
 - iii. the local community; and (2)
 - iv. **ONE** benefit for the country. (1)
- c. Explain **TWO** types of elderly abuse and outline an example of **each**. (2, 2)
- d. Write down **ONE** advantage and **ONE** disadvantage for **each** of the following settings:
 - i. an elderly person living alone; (2)
 - ii. an elderly person living with relatives; (2)
 - iii. an elderly person living in a residential home. (2)

(Total: 20 marks)

3. Rachel is a single parent of a three-year-old child. She lives with her daughter in a rented apartment. Recently she was informed by the landlord that the rent will be raised. Unfortunately, she will **not** be able to afford living in this apartment anymore. Her social worker suggested that she should apply for Social Housing.

- a. Define the term Social Housing. (1)
- b. Outline **THREE** purposes of Social Housing. (3)
- c. Rachel needs to decide if she will rent or buy a house with the help of Social Housing. List **TWO** advantages and **TWO** disadvantages of renting and of buying a home. (8)
- d. Social Housing needs to ensure accessibility, with special consideration to the needs of persons with mobility limitations. List **TWO** measures which need to be present in a block of apartments to ensure access for all. (2)
- e. Rachel had no binding contract with the landlord on her lease. The landlord was renting her flat at a low cost out of her generosity. During the pandemic, the landlord lost her job and so she decided to raise Rachel's rent. Keeping in mind this situation, outline **TWO** reasons why it is important to sign a lease in front of a notary when renting a home. (2)
- f. Having a secure house is very important. List **EIGHT** types of equipment which could be installed to make our homes secure. (4)

(Total: 20 marks)

4. Malta has topped the list of EU countries whose population has reported being exposed to pollution. *(Eurostat, September 2019)*

- a. Carbon dioxide, hydrocarbons and dioxins are three main chemical pollutants.
 - i. List **FOUR** other chemicals which contribute towards global warming and outdoor pollution. (4)
 - ii. Mention **TWO** sources of **each** chemical listed in part (i). (4)
- b. Outline **FIVE** ways how carbon dioxide pollution can be reduced. (5)
- c. Apart from outdoor pollution, there is also indoor pollution. Identify **TWO** indoor pollutants and for **each** pollutant identified, explain **ONE** way how you could eliminate or change it. (1, 2)
- d. Waste disposal is another environmental issue in Malta. Identify **FOUR** ways of how solid and liquid waste is disposed of in Malta. For **each**, briefly explain what happens to the waste after it has been collected or disposed. (4)

(Total: 20 marks)

5. When Sara wants to go shopping, she usually goes to shopping malls, supermarkets and chain stores. On the other hand, her husband Mark prefers to purchase everything through online shopping, mail-order and tele-shopping.

- a. Explain the terms shopping mall, supermarket and chain store. For **each** purchasing method, identify **ONE** advantage and **ONE** disadvantage. (3, 6)
- b. Online shopping has become very popular with Maltese consumers, especially during the recent pandemic.
 - i. Outline **THREE** reasons why this shopping practice has become so popular. (3)
 - ii. Outline **THREE** rights and **TWO** responsibilities of the consumers while shopping online. (3, 2)
- c. When shopping online, Mark could make use of different payment methods. For **each** situation below, identify the best way Mark should pay for his bought goods and services, and justify your answer.
 - i. Mark bought his groceries from the supermarket by sending his shopping list via email. The supermarket does not have a delivery service, so he needs to go there personally to pay and collect his shopping. (1)
 - ii. Mark just bought a new Internet and cable subscription. Now he needs to start paying his bill monthly. (1)
 - iii. Mark bought new headphones from a local shop via their website to use them during his online work meetings. The shop requests online payment before delivery. (1)

(Total: 20 marks)

Questions continue on next page.

6. The planet is warming, from North Pole to South Pole. Since 1906, the global average surface temperature has increased by more than 1.6 degrees Fahrenheit (0.9 degrees Celsius) - even more in sensitive polar regions. *(<https://www.nationalgeographic.com>)*

- a. Discuss **ONE** different impact of global warming on **each** of the following:
 - i. the natural environment; (1)
 - ii. human beings; (1)
 - iii. the physical human-built environment; (1)
 - iv. the world's supply of potable water. (1)

- b. In October 2020, an empty quarry in Bengħajsa has been converted into a solar farm which is providing enough energy to power 760 households. List **TWO** advantages and **ONE** disadvantage of solar water heating systems and of photovoltaic panels. (2, 1, 2, 1)

- c. Conservation of potable and non-potable water is very important to help with the conservation of natural resources.
 - i. Outline **FIVE** ways how one could conserve water in the household. (5)
 - ii. Suggest **THREE** ways how a hotel owner could conserve water. (3)
 - iii. Explain **TWO** national strategies recently introduced to conserve water. (2)

(Total: 20 marks)



SUBJECT:	Home Economics and Human Ecology
PAPER NUMBER:	II
DATE:	14 th June 2021
TIME:	4:00 p.m. to 7:05 p.m.

ANSWER ANY FIVE QUESTIONS (20 marks each)

1. Carbohydrates are macronutrients, which means that they are one of the main nutrients which give the body energy to function well.
 - a. Outline the **THREE** chemical elements common in all carbohydrates, giving their ratio to one another. (2)
 - b. Explain the formation of disaccharides and of polysaccharides from monosaccharides. Include **TWO** examples of **each** type of carbohydrate in your explanation. (2, 2)
 - c. Outline the chemical and physical changes that occur to the structure of carbohydrates when:
 - i. adding flour to homemade white sauce; (2)
 - ii. boiling carrots; (2)
 - iii. baking Maltese bread. (2)
 - d. Justify the following statements from a nutritional perspective.
 - i. A 12-year-old boy requires a higher intake of carbohydrates than his father, who is 40 years old. (2)
 - ii. Diabetic individuals should consume carbohydrate-rich foods that have a low glycaemic index. (2)
 - e. Explain the physical and chemical processes that occur during digestion and absorption of a homemade, high-fibre breakfast muffin. For **each** stage, identify the body organ and enzymes involved. (4)

(Total: 20 marks)***Questions continue on next page.***

2. According to Food and Agriculture Organisation of the United States, in 2019, GM soybean planting accounts for 78% of the total global soybean plantation.
- a. Define GMOs and outline the **THREE** basic scientific principles involved in the production of GMOs. (1, 3)
 - b. Outline **TWO** positive impacts of genetic engineering of crops for:
 - i. the food producers; (1)
 - ii. the world population. (1)
 - c. Discuss **THREE** current concerns related to GM products. (3)
 - d. An alternative to GM products is to buy organic products, such as organic soybeans.
 - i. Explain what organic soybeans are. (1)
 - ii. Give **TWO** benefits of organic produce for:
 - the consumers; (2)
 - the farmers; (2)
 - the environment. (2)
 - e. Explain **TWO** other alternative and sustainable practices which can be adopted by farmers to avoid the use of GM products, apart from organic farming. (2, 2)

(Total: 20 marks)

3. Many post-secondary students opt to buy their lunches from take-away outlets close to their schools and colleges. Although new healthy options are being introduced, many items on take-away menus tend to be high in hydrogenated and trans-fatty acids.
- a. List **FOUR** factors which affect food choices for post-secondary students. (2)
 - b. Discuss, giving **TWO** reasons, why the trend of take-away food consumption is popular amongst post-secondary students. (2)
 - c. With the aid of diagrams, describe the process of hydrogenation and list **TWO** advantages of this process. (2, 2)
 - d. Diets high in hydrogenated oils and trans-fats increase the risk to various diet-related disorders. Justify this statement with valid scientific reasoning. (2)
 - e. With reference to the nutritional scientific implication, justify the following statements:
 - i. Scientists warn against the consumption of hydrogenated fats. (2)
 - ii. Olive oil should be consumed instead of butter and margarine. (2)
 - iii. People with high cholesterol should consume food rich in plant stanols and plant sterols. (2)
 - iv. Our diet should have higher levels of HDL cholesterol rather than LDL cholesterol. (2)
 - v. Carotenoid bioavailability is higher from salads which contain avocados or olive oil. (2)

(Total: 20 marks)

4. *Stuffat tal-Braġġoli* (Beef Olives) is a popular Maltese traditional dish made using thinly sliced beef, and cooked using a slow, moist method of cooking.
- Explain the **THREE** ways how the transmission of heat occurs when cooking food. (3)
 - Compare dry and moist methods of cooking by giving **ONE** difference and **TWO** examples of **each**. (1, 2)
 - Outline **FIVE** modifications that can be made to the following ingredients of the traditional Maltese *Stuffat tal-Braġġoli* recipe, in order to bring it in line with the national nutritional guidelines. Justify **each** modification made. (5)

Traditional Maltese Stuffat tal-Braġġoli	
<u>Ingredients for filling:</u>	
4 beef slices	4 bacon slices
500 g pork mince	2 garlic cloves
4 eggs	2 tbsp. sunflower oil
2 tbsp. cheddar cheese	salt and pepper
<u>Ingredients for sauce:</u>	
1 tbsp. butter	2 cans tomato chunks
2 onions	300 ml beef stock (cube)
1 can peas	200 ml red wine
2 tbsp. tomato paste	2 garlic cloves
1 tsp. mixed spice	salt and pepper
2 bay leaves	

- Recently, slow cookers have experienced a comeback in today's modern busy life.
 - Justify for the recent popularity of this method of cooking. (1)
 - Describe the process of cooking food in a slow cooker. (1)
 - Explain the scientific principle behind the effects on connective tissues in meat when using a slow cooker. (1)
 - Outline **THREE** advantages and **THREE** disadvantages of this cooking method. (3, 3)

(Total: 20 marks)

Questions continue on next page.

5. Tree nuts are one of the most common allergens which may trigger a food allergy or a food intolerance.
- a. Define the terms food allergy and food intolerance and list **TWO** main symptoms of **each**. (1, 1, 2)
 - b. Tree nuts may cause anaphylaxis. Give **FOUR** examples of tree nuts which may cause such reaction. (2)
 - c. Identify **FOUR** traditional desserts where nuts are included. Modify **each** of the desserts identified to obtain a nut-free dessert. (2)
 - d. With reference to the underlying scientific principles, justify the following statements about food allergies.
 - i. Unless food is prepared in a 'nut-free zone', a person may still get an allergic reaction, even if there are no nuts in the food being consumed. (2)
 - ii. In case of a severe food allergy, it is recommended that the person always carries an epinephrine auto-injector pen. (2)
 - iii. People who are allergic to peanuts will **not** necessarily be allergic to tree nuts. (2)
 - e. Schools are one possible site where children may get an anaphylaxis shock in case of severe allergies.
 - i. Outline **FOUR** interventions which can be adopted by a school so the classroom environment is safer for children with food allergies. (2)
 - ii. Describe **FOUR** strategies one can adopt so that children with food allergies can still enjoy food during school activities. (2)
 - iii. State the **FOUR** basic first aid steps to be followed in case of an anaphylaxis shock. (2)

(Total: 20 marks)

6. Ricotta and 'Ġbejniet' (cheeselets) are amongst the most consumed dairy products on the Maltese Islands.
- a. Explain **TWO** differences between these two different types of cheeses. (2)
 - b. Describe the change that occurs when cheese is cooked. (1)
 - c. List **FIVE** nutrients found in ricotta. Explain the role of **each** nutrient listed. (5)
 - d. Justify the importance of including dairy products in the diet of the following:
 - i. a 5-year-old boy; (1)
 - ii. an elderly person recovering from a broken hip bone. (1)
 - e. In order to avoid food waste, one can easily make some homemade ġbejniet or ricotta from extra milk which might have been bought in excess. Describe in **FOUR** steps the process, including the scientific principles, of making either ricotta or ġbejniet. (4)
 - f. Describe in detail the physical and chemical processes involved in the digestion of dairy products. (6)

(Total: 20 marks)