



SUBJECT:	Home Economics and Human Ecology
PAPER NUMBER:	I
DATE:	2 nd September 2019
TIME:	9:00 a.m. to 12:05 p.m.

ANSWER ANY FIVE QUESTIONS (20 marks each)

1. An elderly couple have decided to sell their semi-detached villa and buy a one-bedroom penthouse since their adult children have all moved out to live with their own families. The couple would like to buy a brand new partly-furnished penthouse as they want to keep some of their most cherished pieces of furniture from their villa. The couple are both mobile, but suffer from some arthritis in their wrists and knees.
 - a. Explain **THREE** major social impacts on the lifestyle of this couple as a result of their adult children moving out and having their own families. (3)
 - b. State **TWO** advantages and **TWO** disadvantages of this couple moving from a semi-detached villa to a one-bedroom penthouse. (4)
 - c. Keeping in mind environmental concerns, explain **FOUR** energy-conservation factors which the couple need to look out for when viewing and comparing different penthouses. (4)
 - d. The couple find a buyer for their villa, but in the Contract of Sale they are bound to clear everything from it and leave it empty. Outline **FOUR** ways how this couple can be sustainable when clearing out their old home. (4)
 - e. The couple eventually purchase a penthouse to suit their needs, but they want to improve its security and change the fridge freezer.
 - i. Name **TWO** security measures which the couple could install in their new home, justifying your choice for **ONE** of the measures. (1, 1)
 - ii. Outline **THREE** factors, apart from budget, colour and brand preference, which the couple should keep in mind when choosing a new fridge freezer, giving reasons for your answer. (3)

(Total: 20 marks)

Questions continue on next page

2. Credit and debit cards are common means of financial transactions, which can be used at different points of sale and for online shopping.
- Distinguish between credit and debit cards, and for **EACH** one explain **TWO** different limitations. (1, 2, 2)
 - Suggest **THREE** reasons why paying by such cards has become a widely accepted practice among consumers from a personal's finance and security perspective. (3)
 - The majority of credit cards are chip-and-pin cards and also offer protection insurance policies. Highlight **TWO** limitations of the chip-and-pin cards and **TWO** benefits of the insurance policies. (2, 2)

A couple who live in a terraced house have saved a sum of money and are considering investing it in a ground-floor maisonette close to a seaside area, which they will use as their summer residence. They have fixed an appointment at a local bank to discuss a short-term home loan since they will soon have to sign the Promise of Sale.

- Define Promise of Sale and state **TWO** of its main functions. (1, 2)
 - Outline **TWO** drawbacks of opting for a short-term home loan. (2)
 - Discuss **THREE** advantages of investing in a maisonette in a seaside area. (3)
- (Total: 20 marks)**

3. Young children experience significant social and intellectual development during the early years. Attending a childcare centre can have a positive impact on this development.
- Describe **THREE** key intellectual development stages of children between the ages 1 month to 3 years. (3)
 - One benefit of young children attending childcare centres is the mastery of social skills as they interact with other children their age. Explain **FOUR** specific social skills that the child is likely to develop by attending childcare. (4)
 - Compare and contrast **TWO** aspects of social development taking place in a childcare centre, with how these happen in the family setting. (4)

Play is crucial in childhood and a stimulating environment encourages further creativity and fun.

- A young couple are planning a small play area at home for their two-year-old child. Describe, giving examples, **FOUR** strategies for making this a stimulating child-friendly area. (4)
 - Outline how play helps in **TWO** types of development, other than intellectual and social. (2)
 - Explain **THREE** sustainable practices parents could follow when providing toys for their children. (3)
- (Total: 20 marks)**

4. Shopping malls, hypermarkets and chain stores are different retail outlets which exist on our islands. At the same time, opportunities for online shopping, mail-order and tele-shopping are also available.
- a. Outline **TWO** advantages and **TWO** disadvantages of shopping from hypermarkets or from chain stores for **EACH** of the following:
 - i. A carless, single parent with two very young children who lives in a rented apartment. (4)
 - ii. A recently retired professional couple who have a car and have owned their terraced house for some years. (4)
 - b. Evaluate the various features of online shopping, mail-order and tele-shopping from the social, economic and environmental perspectives. (2, 2, 2)
 - c. Online shopping has become very popular among consumers. Suggest **TWO** precautions one should follow to ensure safe online shopping. (2)
 - d. Name the state entity involved in cross-border consumer disputes and describe the procedure involved in resolving such disputes. (1, 3)

(Total: 20 marks)

5. Global warming and acid rain are two environmental problems which are impacting our quality of life.
- a. Define global warming and outline **THREE** factors that are contributing towards global warming. (1, 3)
 - b. Describe **TWO** negative impacts of global warming on **EACH** of the following:
 - i. the natural environment; (2)
 - ii. human health. (2)
 - c.
 - i. Explain what acid rain is and how it develops. (2)
 - ii. Outline **ONE** main cause of acid rain and give **TWO** related human activities related to this cause. (2)
 - d. Biological energy is often presented as a cleaner alternative energy. Describe the source and use of **TWO** types of biological energy. (4)
 - e. Discuss the value of **TWO** transport-related strategies which could be enhanced or implemented on a national level to reduce the impact of acid rain on the natural environment. (4)

(Total: 20 marks)

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6. The whole month of April is dedicated internationally to raising awareness about Autism. Families of children with developmental disorders, such as autism, encounter a number of difficulties to care for these children.
- a. Outline **TWO** emotional and **TWO** psychological symptoms which may be seen in a child or teenager with autism. (2, 2)
 - b. Explain **THREE** different ways in which the family may need to adjust their behaviours and/or home when there is a young family member with autism. (3)
 - c. Describe **TWO** support systems which are offered to autistic children in state schools and **TWO** which are offered by NGOs, highlighting specific benefits. (2, 2)
 - d. A local primary school has decided to discuss the issue of inclusivity with its senior students. For **EACH** of the following, list **THREE** practical suggestions that might emerge during the discussion.
 - i. Accessibility at school and at home for somebody who has a mobility problem. (3)
 - ii. Integration in the school environment of a child from a low-income family. (3)
 - iii. Integration in the school and village community of a family who arrived in Malta from another country. (3)

(Total: 20 marks)



SUBJECT:	Home Economics and Human Ecology
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DATE:	3 rd September 2019
TIME:	9:00 a.m. to 12:05 p.m.

ANSWER ANY FIVE QUESTIONS (20 marks each)

1. Nowadays, consumers have a choice from a variety of foods which have been grown using different methods and different technology. Amongst these are organic farming, GMOs and hydroponics.
 - a. Define organic produce and list **ONE** health, **ONE** economic and **ONE** environmental implication of producing organically grown food. (1, 3)
 - b. Describe **TWO** methods for enriching agricultural soil by natural means. (2)
 - c. There is ongoing controversy around the production and consumption of GM foods.
 - i. Explain how GMOs are developed and describe **TWO** benefits of GM foods for the consumer and **TWO** benefits for the farmers producing such foods. (1, 4)
 - ii. Describe **TWO** negative impacts of the process of GMO production or of the actual GM product for **EACH** of the following:
 - the natural environment; (2)
 - human health. (2)
 - d. Hydroponics is a food production method that has become popular among Maltese farmers.
 - i. Outline the basic process in hydroponics. (1)
 - ii. Justify the value of hydroponics, stating **TWO** benefits for the consumer and **TWO** benefits for the natural environment. (2, 2)

(Total: 20 marks)
2. Carbohydrates are macronutrients which our body needs for a good supply of energy.
 - a. Define the term macronutrients and name **TWO** macronutrients, other than carbohydrates, required by our body. (1, 1)
 - b. Name the **THREE** chemical elements common to **all** carbohydrates and describe the difference between simple and complex carbohydrates. (1, 2)
 - c. Explain how disaccharides are formed, giving **TWO** examples of this type of saccharides and their component mono-saccharides. (1, 2)
 - d. Analyse the following statements from a scientific perspective:
 - i. There is a difference between Type 1 and Type 2 diabetes. (1)
 - ii. Diabetic individuals should consume carbohydrate foods which have a low glycaemic index. (1)
 - iii. Athletes need to consume more carbohydrate foods than people who have a sedentary lifestyle. (1)
 - iv. Eating wholemeal bread keeps you satiated for much longer when compared to eating sweets. (1)
 - e. Outline the chemical and physical changes that occur to the structure of carbohydrates when baking cookies. (3)

Question continues on next page.

- f. Describe in detail the digestion and absorption of a sugary biscuit, highlighting the body organ/s and enzymes involved at **EACH** stage. (5)

(Total: 20 marks)

3. "Over 57 per cent of patients in Malta tested for Vitamin D levels in 2017 had levels considered to be low or deficient..." (Times of Malta, 22nd May 2018)

- a. Justify why the above incidence could be considered quite surprising for a country like Malta, and outline **TWO** possible reasons for the high percentage. (1, 2)
- b. Write the scientific name of Vitamin D and outline **TWO** functions of this vitamin in our body related to blood, hormones or organs. (1, 2)

Vitamin D is closely associated with calcium.

- c. Explain the scientific principles underlying the following statements about calcium.
- Too much calcium can be dangerous for the kidneys. (1)
 - Muscular cramps can be a symptom of low calcium in the body. (1)
 - Calcium absorption is higher in young children. (1)
 - Spinach contains a chemical which inhibits availability of calcium. (1)
- d. A common outcome of calcium deficiency is osteoporosis. Define osteoporosis and describe **THREE** factors which contribute to the development of this condition which a person cannot avoid. (1, 3)
- e. Recommend **THREE** dietary and **TWO** non-dietary practices which a lactose-intolerant young adult could adopt in order to help prevent the onset of osteoporosis. (3, 2)
- f. Outline **ONE** benefit to the nation of a routine bone density screening for all middle-aged women. (1)

(Total: 20 marks)

4. Most of the food we eat requires cooking. Depending on the choice of cooking method, the food will change its colour, taste, texture and smell.

- a. Describe the **THREE** different methods of heat transfer employed in cooking, referring to the role of heat in the various changes happening to the food in each method. (2, 2, 2)
- b. Explain the difference between moist and dry methods of cooking and give **ONE** example of each. (1, 1)
- c. Outline the scientific principles why food is cooked so quickly in a microwave oven, and describe **TWO** benefits for a family of owning a microwave oven. (2, 2)
- d. For **EACH** of the following situations, explain which cooking method would be most suitable, justifying your answer.
- Fish fillet for a teenager recovering from an illness. (1)
 - Chuck beef for an old man who has difficulty chewing. (1)
 - Chicken breast for a woman suffering from obesity. (1)
- e. Recently, slow-cookers have experienced a comeback in today's modern life.
- Explain the process involved in slow-cooking. (1)
 - Account for the recent popularity of this method of cooking, referring to **THREE** advantages. (3)
 - Describe **ONE** food safety concern of this method of cooking. (1)

(Total: 20 marks)

5. 'Breakfast is the most important meal of the day' is a saying we often hear in relation to healthy diets. However, the number of people skipping breakfast seems to be increasing, especially with school-aged children.
- Identify **FOUR** common reasons which people often give for skipping breakfast and for **EACH** reason suggest a feasible strategy to overcome that problem. (2, 4)
 - Outline **TWO** negative implications of skipping breakfast for a primary school girl. (2)
 - Suggest **TWO** balanced, nutritious and portable breakfast ideas which could be consumed by a 10-year-old student whilst travelling to school. Analyse the health value to the child of the key nutrients or beneficial components found in **ONE** of the described breakfasts of your choice. (2, 3)
 - Draw up a set of **THREE** guidelines you would share with the parents of a young school-aged child, clearly explaining to them how to choose healthy breakfasts which will meet the child's nutritional needs and reduce the risk of health problems. (3)
 - Convenience foods can be used to prepare a quick breakfast early in the morning. For **EACH** of the following, suggest **ONE** suitable healthy breakfast which utilises convenience foods, justifying your choice.
 - A coeliac teenager. (2)
 - A vegan teenager. (2)
- (Total: 20 marks)**

6. Poultry and eggs are two of the mostly consumed foods in Malta.
- Explain the difference between free range and battery farmed chickens and give **TWO** reasons why consumers might prefer meat from free range chickens. (1, 2)
 - Outline scientific principles and/or practical reasons involved in **EACH** of the following statements:
 - The flesh of game normally contains less fat than the flesh of poultry. (1)
 - Poultry can be considered as a very versatile food. (1)
 - Thorough cooking of chicken meat is essential. (1)
 - Suggest **TWO** different dishes using poultry meat suitable for adult office workers of an international environment NGO based in Malta. Justify why these dishes are in line with the national dietary guidelines and sustainability principles. (2, 4)
 - Compare and contrast the nutritive value of egg yolk and albumen. (5)
 - Explain the physical structural changes which occur in the albumen whilst a whole egg is boiling, and state the cause of the grey-green tinge on the surface of the boiled egg yolk. (2, 1)
- (Total: 20 marks)**