



SUBJECT:	<b>Home Economics and Human Ecology</b>
PAPER NUMBER:	I
DATE:	25 <sup>th</sup> April 2019
TIME:	4:00 p.m. to 7:05 p.m.

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

1. The 28<sup>th</sup> September marks 'International Day of Older Persons'. According to the National Statistics Office (Malta, 2018), elderly people make up around 20% of the local population.
  - a. Define the elderly as a population group and explain what is meant by the term active ageing. (1, 1)
  - b. The ageing population is one of the reasons for the increase in residential care homes.
    - i. Explain **FOUR** reasons for this increase in residential care homes, other than the one given above. (4)
    - ii. Outline **FOUR** factors which should be considered when looking for a residential care home for an elderly person. (2)
    - iii. Give **TWO** advantages and **TWO** disadvantages for the elderly persons and/or their relatives when an elderly person moves into a residential care home. (2, 2)
  - c. Indoor and outdoor accidents involving elderly people are fairly common.
    - i. Name **FOUR** common accidents associated with the elderly. For **EACH** accident, list **ONE** possible cause. (4)
    - ii. List **FOUR** adaptations which could be done in an elderly person's home to help prevent accidents. (2)
    - iii. Describe **TWO** support services provided to the elderly in their own home, to help them live a safer life. (2)

**(Total: 20 marks)**
  
2. "The global food system is the single largest emitter of greenhouse gases, the biggest driver of biodiversity loss, and the main cause of deadly algae blooms along coasts and inland waterways." *The Times of Malta (17 January 2019) (www.timesofmalta.com)*
  - a.
    - i. Define the term greenhouse gases. (2)
    - ii. List **THREE** different greenhouse gases and for **EACH**, name **ONE** source. (3)
  - b. The above-mentioned newspaper article states that "Beef is the main culprit". Explain this statement, giving reasons related to livestock production and agricultural processes and how they can be detrimental to the natural environment. (4)
  - c. Describe **THREE** sustainable diet-related strategies which can be adopted at personal and/or family level to combat the negative impact of human food consumption on the natural environment. (3)
  - d. The global food system also needs a shift in human consumption patterns in order to slash food waste.
    - i. Describe **FIVE** factors which are contributing to food waste at any stage in the food chain (from farm to fork). (5)
    - ii. List **TWO** different ways how to reduce food waste in **EACH** of the following: households, the hospitality sector and schools. (1, 1, 1)

**(Total: 20 marks)**

3. Local communities have been introduced to changes in the way household waste is separated and collected. In October 2018, the new initiative of waste collection across Malta and Gozo was launched under the campaign 'Sort it Out'.
- a. Discuss **FOUR** impacts of waste separation at source, referring to both consumers and the nation. (4)
  - b. A young couple is buying a house of character to renovate. They will demolish a room and build a new storey. They are thinking of throwing away old furniture, old appliances and also some car batteries and oil found in the garage.
    - i. Outline **THREE** types of waste they will generate and how it should be disposed of properly. (3)
    - ii. Describe **FOUR** ways how this new storey could be designed to conserve energy. (4)
    - iii. The couple is very environmentally-conscious. As they are renovating the house, explain **TWO** structural adaptations which could be done to conserve water. (2)
    - iv. When planning the furnishings, outline **THREE** different ways how the couple could be creative and reuse the old furniture instead of throwing it away. (3)
    - v. Suggest **FOUR** procedures which could be adopted by the couple to reduce waste once they move into their new home. (4)
- (Total: 20 marks)**

4. In the year 2018, there was an increase in the number of cases of measles among young children on a global level (WHO, February 2019). One reason is due to an increase in the number of parents deciding not to vaccinate their young children.
- a. Justify the importance of child immunisation for the child and for the nation, and outline **TWO** reasons why parents may choose not to vaccinate their young children. (2, 2)
  - b.
    - i. Measles is only one disease related with children. Define measles, referring to its symptoms and incubation period. (2)
    - ii. Name the vaccine related with measles and state the ages when it is given. (2)
  - c. One particular vaccine on the National Immunisation Programme is referred to as the '5-in-1'. Explain what this means. (1)
  - d. Besides physical health needs, such as vaccination, children also have social, emotional and intellectual needs. For **EACH** need, describe **TWO** ways how the child's family can help fulfil these needs. (6)
  - e. Recently there was a dramatic increase in child care centres in Malta and Gozo. Explain **FIVE** factors which parents need to look out for when choosing and comparing child care centres. (5)
- (Total: 20 marks)**

5. a. Every Christmas, Caritas Malta holds a free Christmas lunch targeted to counter one of the major challenges in society, that of loneliness.
- i. Define social exclusion and list **THREE** causes of this type of exclusion. (1, 3)
  - ii. Explain **TWO** preventive measures and **TWO** remedies for social exclusion. (2, 2)
  - iii. The Caritas Christmas lunch is run by volunteers. Give **TWO** benefits for a person doing voluntary work in the community. (2)
- b. A young couple is attending a wedding-preparation course. One of the main topics discussed is stress and conflict among family members.
- i. Outline **FOUR** potential sources of stress and their impact on a couple with school-aged children. (4)
  - ii. Describe **TWO** strategies to manage **EACH** of the following for the smooth-running of the family: Time, Money, Care of household. (3)
- c. Another initiative to help people in need is the setting up of a food bank. Explain the term 'food bank' and highlight **TWO** benefits for food bank clients. (1, 2)  
**(Total: 20 marks)**
6. According to the National Statistics Office (October 2018), 44.1% of all inhabited dwellings in Malta and Gozo are either detached, semi-detached or terraced houses. The remaining 55.9% are mostly either apartments or maisonettes.
- a. Discuss **FOUR** major changes in family unit structures which have contributed to the percentage difference in favour of apartments and maisonettes as mentioned above. (4)
  - b. Compare and contrast **TWO** of the above-mentioned dwellings, taking into account economic, environmental and social factors. (2, 2, 2)
  - c. Outline **FOUR** benefits of living in a ground floor maisonette for elderly siblings, one of whom has mobility problems. (4)
  - d. A young couple have just graduated and are planning to get married. They have started doing research about available options for their future home. Mention **ONE** advantage and **ONE** disadvantage of the following options they are considering:
    - i. renting a place; (2)
    - ii. taking out a home loan to buy their property; (2)
    - iii. moving in with an elderly relative who would like someone to sleep with them at night. (2)**(Total: 20 marks)**




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SUBJECT:	<b>Home Economics and Human Ecology</b>
PAPER NUMBER:	II
DATE:	29 <sup>th</sup> April 2019
TIME:	9:00 a.m. to 12:05 p.m.

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

1. "The number of salmonella cases reported to the health authorities so far this month has surpassed that in previous years, peaking at 20 cases in July alone." (Times of Malta, 29<sup>th</sup> July 2018)
  - a. Name **ONE** possible source of salmonella food poisoning and state its incubation period. (1)
  - b. Describe **TWO** symptoms of salmonella food poisoning and suggest **TWO** preventive measures to avoid such poisoning. (1,2)
  - c. Considering the above excerpt from a local newspaper, suggest **THREE** possible reasons for this increase in salmonella poisoning. (3)
  - d. In 2018, the presence of salmonella was confirmed in a number of egg-producing farms in Malta.
    - i. Describe **ONE** food process that eggs can undergo to kill micro-organisms and reduce the likelihood of food spoilage. (1)
    - ii. HACCP is an effective means of ensuring food safety during food production. Define HACCP and outline **FOUR** principles of this regulation programme. (1,2)
    - iii. Compare the types of Food Handlers Certification legally required in Malta. (2)
  - e. Micro-organisms and enzymes have a useful role in the making of specific foods.
    - i. Define the term enzymes. (1)
    - ii. Explain the scientific principles involved in yoghurt making. (6)

**(Total: 20 marks)**

**Questions continue on next page**

2. Fat is one of the main constituents of animal cells, serving as an important source of fuel.
- Outline **TWO** benefits of fat in the diet, other than being a concentrated source of energy. (2)
  - Describe, naming key components, the general chemical structure of a fat molecule. (2)
  - State **TWO** differences between the physical and chemical structure of a saturated fatty acid and a polyunsaturated fatty acid. Highlight these differences with the aid of labelled diagrams. (2,1)
  - Justify the following statements about fats and oils by giving a scientific explanation for **EACH**:
    - hydrogenated fats can do as much harm as saturated fats; (1)
    - fat spreads enriched with plant sterols may reduce blood cholesterol levels. (1)
  - "Obesity is a well-established global epidemic, with an estimated 50% of the European population being overweight." (Brandt L, Erixon F, 2013)
    - Compare the definitions of overweight and obesity. (2)
    - Discuss **TWO** dietary and **TWO** non-dietary measures which a person who suffers from obesity can take to reduce weight. (2,2)
  - Describe in detail the physical and chemical processes involved in the digestion and absorption of lipids. In your description, refer to the enzymes involved in the digestion process. (5)

**(Total: 20 marks)**

3. A local food producer has been working on the labelling and a plastic packaging for an innovative food item involving fresh rabbit meat ravioli.
- Describe **THREE** functions of food packaging. Identify **TWO** negative effects of food packaging on the consumer and **TWO** negative effects on the environment. (3,1,1)
  - Date marking is required by law on all food products. Differentiate between the use by and best before dates. (1,1)
  - According to EU legislation, food labelling should include essential information for the consumers. List **FOUR** types of information (other than date mark) which should be included on a food label. (2)
  - Outline **THREE** advantages and **THREE** disadvantages of using plastic food packaging for the above-mentioned proposed fresh rabbit meat ravioli. (3)
  - In order to increase the shelf life of these rabbit ravioli, the producer is considering the use of MAP. Describe how MAP works, explaining why this process extends the shelf life of food. (2)
  - Should this product be made without the use of gluten, the producer may include an important symbol on the packaging. Name and describe this symbol, stating its use for consumers. (1,1)
  - In 2015, 166.3 kg of packaging waste per inhabitant were generated in the EU. (*Eurostat – online date code: env\_waspac*)
    - Describe **TWO** initiatives that can be taken by consumers to reduce the negative impact of food packaging. (1)
    - Sustainable consumers are conscious about reducing food miles. Define the term food miles and suggest **FOUR** strategies to help with their reduction. (1,2)

**(Total: 20 marks)**

4. The Maltese national dietary guidelines recommend that we should eat a nutritious diet, based on a variety of foods originating mainly from plants, rather than animals.
- Plant foods give us a good supply of antioxidants. Explain how antioxidants function to protect human health. (2)
  - Apart from antioxidant content, outline **FIVE** health benefits of a diet rich in plant foods for an elderly person with mobility problems. Include the underlying scientific principles for **EACH** health benefit outlined. (5)
  - Describe **ONE** non-diet related benefit of eating plant foods over animal foods for elderly people. (1)
  - Define the term vegetarianism, giving **TWO** reasons why people may choose to become vegetarians, and explain the difference between vegans and lacto-ovo vegetarians. (1,1,2)
  - Plan a day's menu, including a snack, suitable for a young lacto-vegetarian woman, describing how the nutritive value of the different foods meet her dietary needs. (6)
  - Vegans are commonly missing one important vitamin in their diet. Name this vitamin, using its scientific term, and mention **TWO** food sources rich in this vitamin. Suggest **TWO** ways how vegans can ensure they consume the recommended daily intake of this vitamin. (1,1)

**(Total: 20 marks)**

5. a. Martha is a 30-year-old pregnant woman who has recently been suffering from constipation. Her doctor suggested that she increases her intake of water and dietary fibre. Suggest **FOUR** strategies which Martha could adopt to increase her consumption of water and **FOUR** strategies to increase her dietary fibre consumption. (2,2)
- b. Give the chemical composition of water and describe **FOUR** functions of water in the human body. (1,4)
- c. Select **TWO** minerals from those listed in the bottled water label below (apart from calcium) and for **EACH** explain **TWO** functions in the body. (2,2)

Natural Mineral Water	
Typical Analysis in mg/l	
Calcium	98.0
Magnesium	11.8
Potassium	6
Sodium	16.9
Fluoride	5.4

- d. Give **ONE** reason why the following groups of people need a higher intake of water.
- A mother who is lactating. (1)
  - People on a high-fibre diet. (1)
  - People suffering from diabetes. (1)
- e. State the daily recommendation of dietary fibre and list **TWO** related digestive system diseases, other than constipation. Explain how **ONE** of the mentioned digestive system diseases develops. (1,1,2)

**(Total: 20 marks)**

6. "90% of fish stocks in the Mediterranean are overfished. The fish are being caught in a way that will lead to their population collapsing" (Maria Damanki - Former Fisheries Commissioner for the EU.)
- a. Fish can be classified as white fish, oily fish and shellfish. For **EACH** category:
    - i. describe **TWO** main physical characteristics; (3)
    - ii. state **TWO** key nutritive properties and their relation to human health. (3)
  - b. Define the term aquaculture. Outline **TWO** advantages of this method of obtaining fish as perceived by restaurant owners and **TWO** disadvantages as perceived by environmentalists. (1,2,2)
  - c. Wild fish stock in the Mediterranean seas is being depleted. Suggest **FOUR** recommendations how people can be sustainable consumers of fish. (4)
  - d. Dolphin Fish (*Lampuka*) is a type of white fish which is caught locally.
    - i. Suggest **TWO** healthy recipes which can be made with this fish. (1)
    - ii. Describe **TWO** healthy ways how this fish can be efficiently stored if bought in bulk when it is in season, to preserve it for later use. (2)
  - e. Tuna is another popular fish in Malta. When tuna is not in season, it can be bought canned. Compare the nutritive value of canned and fresh tuna, by explaining **TWO** differences. (2)

**(Total: 20 marks)**