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SUBJECT: **Home Economics & Human Ecology**  
 DATE: 3rd May 2022  
 TIME: 9:00 a.m. to 12:05 p.m.

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## SECTION A

**Answer ALL questions.**

1. List the chemical names of **THREE** antioxidant vitamins. Describe **TWO** functions of antioxidant vitamins. (1, 2)
2. Give a scientific justification why a higher intake of folic acid is recommended during pregnancy. State the required amount of folic acid needed during pregnancy according to the European Food Safety Authority (EFSA). (1, 1)
3. Hypertension is highly prevalent in Malta. Explain what happens if a person suffers from hypertension. Name **THREE** foods which must be avoided and **THREE** foods which can safely be consumed by a person who suffers from this condition. (1, 3)
4. Outline **TWO** basic functions of water in our body. Describe what happens to the body if lack of water is consumed and highlight **TWO** groups of people who might require a higher intake of water in their diet. (2, 1, 1)
5. Explain what happens if there is an energy imbalance in the body. By referring to the BMI, compare the difference between overweight and obesity. (1, 2)
6. Compare the difference between a food allergy and a food intolerance. Explain lactose intolerance. Name **ONE** food which should be avoided and **ONE** possible food replacement one would suggest to a lactose intolerant person. (2, 1, 1)
7. Outline **THREE** ways in which food can become contaminated by bacteria in the kitchen. Name **FOUR** high risk foods of Salmonella food poisoning and state **THREE** common symptoms of such food poisoning. (1½, 2, 1½)
8. Psychological stress is a common problem of modern life and can modify behaviours that affect our health, including food choice. Briefly discuss this statement and name **TWO** other factors that affect our food choices. (1, 1)

***Please turn the page.***

9. Identify and give the meaning of **TWO** of the following eco-friendly labels that are commonly found on detergent bottles. (2, 2)

 <p>Source: <a href="https://www.energystar.gov/">https://www.energystar.gov/</a></p>	 <p>Source: <a href="http://guides.stopwaste.org/packaging/avoiding-pitfalls/green-dot">http://guides.stopwaste.org/packaging/avoiding-pitfalls/green-dot</a></p>	 <p>Source: <a href="https://www.msc.org/">https://www.msc.org/</a></p>	 <p>Source: <a href="https://repak.ie/recycling/recycling-symbols/">https://repak.ie/recycling/recycling-symbols/</a></p>
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10. The 'Right to Redress' is one of the eight consumer rights. State how consumers can benefit from this right and outline **THREE** methods of redress that consumers can resort to in case they need to make a complaint. (½, 1½)
11. Outline the difference between 'haem' and 'non-haem' iron. Name **ONE** factor that aids iron absorption in the body and **TWO** factors that hinder the absorption of iron. (1, 1, 2)
12. Various marketing strategies are observed in shops and retail outlets during the discount sale period. Name **TWO** marketing strategies commonly used during this period and outline **TWO** implications discount sales can have on **both**:
- i) the consumer;
  - ii) the retailer.
- (1, 1, 1)

**(Total: 40 marks)**

**SECTION B**

**Answer ANY THREE questions.**

1. Lipids are one of the main macronutrients which are essential for our body when consumed in moderate amounts.
  - a) Compare the main difference between micro and macronutrients. (1)
  - b) Outline **FOUR** functions of lipids in the body. (2)
  - c) Name the chemical elements and draw the structure of a triglyceride. (1, 1)
  - d) Describe hydrogenated fats. Outline **ONE** disadvantage of consuming these types of fats. (1, 1)
  - e) Omega-3 and Omega-6 fatty acids are two types of polyunsaturated fats.
    - i) Outline the difference between saturated, monounsaturated and polyunsaturated fats. (1, 1, 1)
    - ii) Discuss **THREE** benefits of Omega-3 and Omega-6 fatty acids in relation to heart health. (3)
    - iii) List **TWO** food sources of Omega-3 fatty acids and **TWO** food sources of Omega-6 fatty acids. (1, 1)
  - f) Coronary heart disease (CHD) is a condition which may be prevented with the correct choice of food and healthy lifestyle.
    - i) Define coronary heart disease. (1)
    - ii) Identify **FOUR** ways how a forty-year-old woman can modify her diet to reduce the risk of developing CHD. (2)
    - iii) Suggest a one-course meal suitable for an elderly person who suffers from CHD. Justify the choice of suggested dish. (2)

**(Total: 20 marks)**

2. Malta's Sustainable Development Vision for 2050 sets out a long-term framework for advancing sustainable development whilst taking into consideration past shortcomings and achievements. This vision is only possible if Maltese citizens adopt the idea of green consumers. (<https://tinyurl.com/2p97bbs4>)
  - a) Define the terms sustainable development and green consumers. (1, 1)
  - b) Malta has adopted various waste management services and facilities to encourage citizens to act sustainably.
    - i) Describe **FOUR** waste management services and facilities provided locally and identify **TWO** different types of waste material which can be disposed for each service/facility. (4, 4)
    - ii) Explain **TWO** environment benefits of following the principles of separating waste at source. (2)

***Please turn the page.***

- c) Recommend **TWO** practices, including a valid justification, that could be considered by families or individuals to conserve non-renewable resources in the following situations:
- i) A husband preparing a 3-course meal dinner for his wife's birthday celebration.
  - ii) A couple refurbishing the kitchen of their newly bought farmhouse.
  - iii) The government is building a new road to ease traffic in a busy Maltese town where a lot of limestone waste is going to be generated.
  - iv) A family who decided to renovate their back garden where some of the soil will have to be removed. (2, 2, 2, 2)

**(Total: 20 marks)**

3. According to the World Health Organisation (2021), by 2050 the world's population of people aged 60 years and older will double and the number of persons aged 80 years or older is expected to triple between 2020 and 2050 to reach 426 million.

- a) Outline **FOUR** factors that are contributing towards the global growth in the elderly population. (2)
- b) Briefly explain the concept of active ageing and outline **FOUR** ways how the elderly in Malta can maintain a healthy and active lifestyle. (1, 2)
- c) Discuss different ways how grandparents can enhance their grandchildren's quality of life. (3)
- d) The elderly people are often victims of robbery or scams, sometimes even by their family members or by their own carers.
  - i) Outline **TWO** reasons that make the elderly people more at risk of being robbed. (2)
  - ii) Highlight **TWO** measures the elderly people and/or their loved ones can take to reduce the risk of being robbed or scammed. (2)
  - iii) Outline **TWO** initiatives a Local Council could pursue to provide a safe and secure environment for the elderly living in their locality. (2)
- e) Financial security is also crucial at this stage in life. Outline **THREE** ways how individuals can plan to ensure financial stability when they reach retirement age. (3)
- f) Outline **THREE** recommendations one would give to a couple who just reached retirement age and are living in their own three-bedroom terraced house, to reduce their expenses and/or increase their income. (3)

**(Total: 20 marks)**

4. Denis Burkitt, in the late 1960's and early 1970's, was the first researcher to link a high fibre diet with better health. After studying rural communities in Africa, he observed that eating their traditional high-fibre diet resulted in healthier stools and better bowel movements in contrast to those living in cities and consuming a western diet.

- a) Give the daily recommended intake of dietary fibre (NSP) for an adult. (1)
- b) Briefly explain **TWO** Maltese dietary guidelines which promote a high-fibre diet. (2,2)

- c) Name the **TWO** types of dietary fibre found in fruit, vegetables and wholegrain cereals and for **each** type of fibre, explain the function and health benefits in the body. (1 ,2, 1)
- d) Apart from colorectal cancer, name and describe **TWO** long-term health implications that could occur as a result of a diet low in wholegrain cereals. (2, 2)
- e) Consuming a fibre rich diet reduces the risk of colorectal cancer. Other than a fibre rich diet, name **TWO** dietary and **TWO** non-dietary factors that reduce the risk of colorectal cancer. (1, 1)
- f) A young father of two teenage children needs some practical tips and guidance to include more NSP in his children's packed lunches. Assist the father by suggesting **SIX** different healthy packed lunches which are rich in NSP. (3)
- g) Give **TWO** reasons why it is **not** recommended to consume excessive amounts of dietary fibre on a daily basis. (2)

**(Total: 20 marks)**