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SUBJECT:	<b>Home Economics and Human Ecology</b>
PAPER NUMBER:	I
DATE:	2 <sup>nd</sup> September 2020
TIME:	9:00 a.m. to 12:05 p.m.

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

1. One of the aims of the European Child and Adolescent Health Strategy 2015–2020 is to “enable children and adolescents in the WHO European Region to realise their full potential for health, development and well-being”. (*WHO Region for Europe, July 2014*)
  - a. Identify the **FOUR** key developmental areas which influence the health and well-being of children between the age of 0 to 4 years. (2)
  - b. Give **FOUR** examples of changes which occur at each developmental area identified in part (a). (8)
  - c. Identify **TWO** basic needs which support the development of the child in **TWO** of the developmental areas mentioned in part (a). (4)
  - d. Safety is an important aspect in children’s well-being. It is crucial that we keep children safe, both inside and outside the home.
    - i. Write down **THREE** examples of how one can ensure safety inside the home. (3)
    - ii. Write down **THREE** examples of how one can ensure safety while at the playground or travelling in cars. (3)

**(Total: 20 marks)**
  
2. Many people choose to invest their money in property. The type of property purchased can vary depending on the reasons why one is buying it.
  - a. Outline **THREE** economic factors which influence the type of home bought. (3)
  - b. State **THREE** ways of raising money to acquire or finish a home and give **TWO** advantages and **TWO** disadvantages for each. (3, 6)
  - c. When purchasing a house, buyers need to acquire certain documentation. Define ‘promise of sale’, ‘deed of sale’, ‘home insurance policy’ and ‘life insurance policy’ and describe the function of **EACH**. (4, 4)

**(Total: 20 marks)**

3. The government's vision for 2050 is to develop the sustainability and resilience of communities through improved green infrastructure; protecting landscapes as well as biodiversity; and the secure and enough supply of low-carbon energy and water resources.

*(Malta's Sustainable Development Vision for 2050)*

- a. Define the term sustainability. (1)
- b. Write down **TWO** measures one could take in order to conserve each of the following non-renewable resources: energy, water and limestone. (6)
- c. During Christmas time consumers tend to spend a lot of money on presents which are not always sustainable. Suggest **THREE** ways how you could be sustainable in presents. (3)
- d. Identify **FIVE** ways how you can safeguard the natural environment when choosing goods and services. (5)
- e. Explain **FIVE** ways how saving energy and water contributes towards the environment's sustainability. (5)

**(Total: 20 marks)**









4. The new Consumer Rights Directive was launched in 2011. It complements national consumer rules in several important areas, such as the information consumers need before they purchase goods and services.

*(Official Journal of the European Union, 22.11.2011)*

- a. John wants to buy a new dishwasher.
  - i. List **FOUR** sources from where John may get information before buying his dishwasher. (2)
  - ii. Choose **TWO** of the sources of information which you listed in part a (i) and write down **TWO** advantages and **TWO** disadvantages of each source. (4)
- b. Outline **FOUR** factors which John needs to consider when buying the dishwasher. (2)
- c. John saw an advert on a magazine stating a 5-year guarantee on the purchase of a dishwasher. When John visits the shop, the salesperson informs him that there are two types of guarantees. The dishwasher only carries a 2-year guarantee. A 5-year guarantee can be obtained by paying an extra €50. Name and explain the difference between the **TWO** different types of guarantees available. (4)

d. Identify the following labels found on goods and give their function.

(8)

<p>i. </p> <p>Source: <a href="https://www.logolynx.com">https://www.logolynx.com</a></p>	<p>ii. </p> <p>Source: <a href="https://www.logolynx.com">https://www.logolynx.com</a></p>	<p>iii. </p> <p>Source: <a href="https://www.logolynx.com">https://www.logolynx.com</a></p>	<p>iv. </p> <p>Source: <a href="https://www.logolynx.com">https://www.logolynx.com</a></p>
<p>v. </p> <p>Source: <a href="https://www.logolynx.com">https://www.logolynx.com</a></p>	<p>vi. </p> <p>Source: <a href="https://ec.europa.eu/jrc/en/energy-efficiency/products/ecodesign">https://ec.europa.eu/jrc/en/energy-efficiency/products/ecodesign</a></p>	<p>vii. </p> <p>Source: <a href="https://www.logolynx.com">https://www.logolynx.com</a></p>	<p>viii. </p> <p>Source: <a href="https://www.ecotextile.com/2013121612360/labels-legislation-news/eu-ecolabel-changes-textile-criteria.html">https://www.ecotextile.com/2013121612360/labels-legislation-news/eu-ecolabel-changes-textile-criteria.html</a></p>

**(Total: 20 marks)**

5. Clive and Sarah are going on a trip around Europe. They are still not sure how they are going to pay for their flight tickets, hotel, as well as for the goods and services while abroad.

- a. List **FIVE** methods of payment which they could use. For **THREE** of the methods suggested, mention **TWO** advantages and **TWO** disadvantages. (5, 6)
- b. Whilst carrying out their financial transactions they came across the following terms: 'EPOS', 'QR code' and 'barcodes'. Explain the function of each, highlighting where they will come across such terms. (6)
- c. Outline **THREE** security measures that Clive and Sarah need to take when effecting electronic transactions. (3)

**(Total: 20 marks)**

**Questions continue on next page**

6. Jane managed to sell her villa and is thinking about saving or investing her money wisely.
- a. Describe **THREE** different ways how Jane can invest her money. Identify **ONE** advantage and **ONE** disadvantage that each way presents to Jane. (3, 3)
  - b. The Malta Financial Services Authority is an entity which Jane can consult on her financial matters.
    - i. Describe the role of the Malta Financial Services Authority (MFSA). (1)
    - ii. Explain in detail how this entity can assist Jane on financial matters before and after investing her money. (4)
  - c. Apart from her 'non-wage income', Jane has a full-time job with a monthly wage. On her payslip, her wage is split in two; the 'gross income' and the 'disposable income'. Define the different types of income stated above. (3)
  - d. Jane opted to sell her villa after she found herself in debt and living on credit.
    - i. Write down **FOUR** possible causes which might have caused Jane to run into debt. (2)
    - ii. State another **FOUR** effects of debt on Jane, other than selling her villa. (4)
- (Total: 20 marks)**



SUBJECT:	<b>Home Economics and Human Ecology</b>
PAPER NUMBER:	II
DATE:	3 <sup>rd</sup> September 2020
TIME:	9:00 a.m. to 12:05 p.m.

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

1. 'The Dietary Guidelines for Maltese Adults and The Healthy Plate' encourage the intake of fruit and vegetables in our daily meals as they are nutrient dense.
  - a. Identify the daily servings of fruit and the daily servings of vegetables, as advised by 'The Dietary Guidelines for Maltese Adults'. (½, ½)
  - b. Fruit and vegetables are a good source of antioxidants. List the chemical name of **THREE** antioxidant vitamins present in fruit and vegetables. (1 ½)
  - c. Fruit and vegetables contain intrinsic sugar. Explain the term 'intrinsic sugar' and name **ONE** sugar predominantly found in fruit. (1, ½)
  - d. A wide range of local and imported fruit and vegetables can now be found in our local market. Discuss **ONE** health and **ONE** environmental benefit of promoting local produce when compared with imported fruit and vegetables. (1, 1)
  - e. Outline **TWO** guidelines that one should keep in mind when purchasing fruit and vegetables to ensure freshness. (2)
  - f. It is advisable to freeze vegetables that are in season for later use. Ideally, blanching should be carried out before freezing. Explain the aim of blanching and in **FOUR** brief steps describe the process of blanching broccoli. (1, 2)
  - g. List **TWO** guidelines that should be followed when preparing vegetables to preserve the vitamin content. Justify the importance of following each guideline. (2, 2)
  - h. Name **TWO** cooking methods that could be used to conserve vitamin content when cooking vegetables. Analyse why each cooking method mentioned could preserve vitamin content. (1, 2)
  - i. Suggest **TWO** creative ways how parents of primary school aged children can incorporate both fruits and vegetables in a school packed lunch. (1, 1)

**(Total: 20 marks)**

2. Protein is one of the nutrients required daily in the diet.
- a. List **FOUR** chemical elements present in all proteins. (2)
  - b. Identify **TWO** main roles of protein in the human diet. (2)
  - c. Explain what happens when the intake of protein is much greater than the body's immediate requirements. (2)
  - d. Amino acids can be classified into essential amino acids and non-essential amino acids.
    - i. Define the terms 'essential amino acids' and 'non-essential amino acids'. (2)
    - ii. Name **TWO** essential amino acids for adults, **ONE** essential amino acid for children and **TWO** non-essential amino acids for adults. (1, ½, 1)
  - e. Protein food can be of high biological value (HBV) and of low biological value (LBV).
    - i. Differentiate between HBV protein and LBV protein food. (2)
    - ii. List **TWO** food items rich in HBV protein and **TWO** food items rich in LBV protein. (1, 1)
    - iii. State **ONE** reason why LBV protein food can be considered healthier than HBV protein food and give **ONE** reason why LBV protein food can be more economical. (1, 1)
  - f. A vegan's diet may lack high quality protein if not well-planned.
    - i. Describe how a vegan could obtain adequate amounts of high quality protein when consuming plant food, giving **ONE** example of what a vegan could consume. (1, ½)
    - ii. In relation to protein, explain why soya products are vital in a vegan's diet. Give **TWO** examples of soya products. (1, 1)
- (Total: 20 marks)**

3. Marika has just confirmed with her gynaecologist that she is in her fifth week of pregnancy.
- a. Together with her doctor they came up with changes she needs to make in her diet.
    - i. Explain why Marika needs to increase calcium, vitamin D and folic acid in her daily diet. (3)
    - ii. Identify **TWO** food sources, suitable for Marika, which are rich in:
      - calcium (1)
      - vitamin D (1)
      - folic acid (1)
  - b. Her doctor also advised Marika to eat food rich in dietary fibre and drink more water to avoid constipation.
    - i. Explain why eating fibre rich food and drinking water is necessary to avoid constipation. (1)
    - ii. Give **ONE** example how Marika could include dietary fibre in her diet. (1)
    - iii. Indicate **ONE** other reason why drinking water is important during pregnancy. (1)
  - c. Identify **TWO** food items that Marika should avoid and outline the reason for their avoidance. (1, 2)
  - d. Discuss **TWO** reasons why breast milk is the best milk for Marika's child. (2)

- e. Marika received an invitation by Parentcraft Malta to attend a talk about weaning.
- Identify the age at which weaning should start and discuss why weaning should begin at that age. (½, 1 ½)
  - Explain why babies need to be weaned. (1)
  - List **TWO** introductory foods and describe **TWO** ways how these foods should be introduced in the baby's diet. (1, 2)

**(Total: 20 marks)**

4. a. The WHO document, 'Global report on diabetes', issued in 2016, demonstrates that the number of adults living with diabetes has almost quadrupled since 1980 to 422 million adults. This dramatic rise is largely due to the rise in type 2 diabetes.
- Explain what happens in the body when a person has type 2 diabetes. (2)
  - List **TWO** symptoms that may indicate that a person could be suffering from diabetes. (1)
  - Suggest **ONE** way how a person could diagnose that s/he is diabetic. (1)
  - Mention **ONE** dietary measure and **TWO** non-dietary measures that a diabetic person can follow to control diabetes. (1, 2)
  - Name **TWO** consequences that could develop if diabetes is left untreated. (2)

- b. "Anaemia, affects roughly one third of the world's population".

*(Nutritional anaemias: tools for effective prevention and control, WHO, 2017)*

- Define anaemia. (1)
  - Explain the main dietary cause of anaemia. (1½)
  - Identify **TWO** symptoms that may indicate that a person could be suffering from anaemia. (1)
  - Name **TWO** groups of people who are at a greater risk of developing anaemia, justifying your answer. (1, 2)
- c. Suggest **THREE** modifications that can be carried out to the following Baked Rice recipe to make it suitable for a person suffering from type 2 diabetes and anaemia. Justify each modification. (1½, 3)

150g plain rice  
200g minced chicken  
1 small can tomatoes  
1 tsp. tomato paste  
1 small onion  
1 tablespoon frozen peas  
½ tsp. mild curry  
½ tsp. paprika  
150 ml skimmed milk  
50g grated mozzarella  
1 egg  
125 ml water  
Some olive oil

**(Total: 20 marks)**

5. "Fresh milk is collected every day from around 63 farms in Malta and another 33 in Gozo. The milk is not sterilised but simply pasteurised to retain its fresh taste and quality."

(www.benna.com.mt)

- a. Explain why milk is heat treated. (1)
- b. Describe the process of the production of pasteurised and ultra-heat treated (UHT) milk. Comment on the effect that these heat treatments have on the colour, flavour and vitamin B content of milk. (1, 1, 2)
- c. State how pasteurised and UHT milk should be stored. (1, 1)
- d. The following is the nutritional value of whole, semi-skimmed and skimmed pasteurised milk.

Whole milk per 100 ml		Semi-skimmed milk per 100 ml		Skimmed milk per 100 ml	
Energy	63 Kcal	Energy	54 Kcal	Energy	35 Kcal
Fat	3.5 g	Fat	2.5 g	Fat	0.3 g
of which saturated	2.0 g	of which saturated	1.5 g	of which saturated	0.2 g
Carbohydrates	4.8 g	Carbohydrates	4.8 g	Carbohydrates	4.8 g
of which sugars	4.8 g	of which sugars	4.8 g	of which sugars	4.8 g
Retinol	52 µg	Retinol	21 µg	Retinol	1 µg
Vitamin D	0.03 µg	Vitamin D	0.01 µg	Vitamin D	Trace
Vitamin B2	0.15 mg	Vitamin B2	0.15 mg	Vitamin B2	0.15 mg

(Adapted from: www.benna.com.mt)

Using the nutritional information above, account for the difference in the:

- i. fat content of the different milk; (1)
  - ii. energy content of the different milk; (1)
  - iii. fat-soluble vitamins of the different milk. (1)
- e. Yoghurt is a product derived from milk.
    - i. Name **TWO** other locally produced dairy products. (1)
    - ii. Outline **TWO** sweet and **TWO** savoury dishes that include the use of yoghurt. (1, 1)
  - f. Some people are either allergic or intolerant to milk. Outline the difference between milk allergy and lactose intolerance. (3)
  - g. Identify the mineral that could be deficient in a lactose intolerant diet. (½)
  - h. Name and explain the deficiency that a lactose intolerant person could suffer from due to the lack of the mineral mentioned in part g. (½, 1)
  - i. Outline **TWO** dietary measures that a lactose intolerant person could adopt to ensure adequate intake of this mineral. (2)

**(Total: 20 marks)**



6. "Once food has been harvested, gathered or slaughtered, it starts to deteriorate until it becomes unfit for consumption."  
*(Anita Tull, 1997)*
- a. Name **THREE** micro-organisms that are responsible for food spoilage. (1½)
  - b. Name and explain **FOUR** conditions that affect the growth of micro-organisms. (4)
  - c. Explain the scientific principles underlying the following statements.
    - i. Cut apples will turn brown. (1)
    - ii. Bananas become very sweet when ripe. (1)
    - iii. Vegetables, such as carrots, wrinkle and shrink. (1)
    - iv. Food, such as fruit, vegetables and milk, tend to spoil rapidly. (1)
  - d. Foods are preserved to delay spoilage and extend their shelf-life.
    - i. Dehydration is one of the early forms of food preservation. Explain why dehydration is an effective method of preservation. (1)
    - ii. Sun drying is one method of dehydration. Name **TWO** other methods of dehydration. (1)
    - iii. List **TWO** food items which could be preserved at home using sun drying. (1)
    - iv. Irradiation is a commercial method of food preservation. Explain how food is preserved during irradiation. (1)
    - v. Indicate **ONE** effect of irradiation on food. (1)
    - vi. List **THREE** food items which could be preserved using irradiation. (1½)
  - e. Outline **TWO** other benefits of food preservation and **TWO** disadvantages of food preservation. (4)

**(Total: 20 marks)**