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**FOOD STUDIES**

**9336/01**

Paper 1

**October/November 2017**

**3 hours**

Additional Materials: Answer Booklet/Paper

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**READ THESE INSTRUCTIONS FIRST**

If you have been given an Answer Booklet, follow the instructions on the front cover of the Booklet.

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

You may use an HB pencil for any diagrams or graphs.

Do not use staples, paper clips, glue or correction fluid.

**DO NOT WRITE IN ANY BARCODES.**

Answer **four** questions, **two** from Section A and **two** from Section B.

Write your answers on the separate Answer Booklet/Paper provided.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [ ] at the end of each question or part question.



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This document consists of **5** printed pages and **3** blank pages.

**Section A**

Answer **two** questions.

- 1 (a) Explain the term *essential amino acid* and give **two** examples. [4]
- (b) With the aid of diagrams, describe the chemical structure of amino acids and the primary structure of proteins. [6]
- (c) (i) Explain how the body absorbs amino acids. [2]  
(ii) Explain the need for amino acids in the body. [3]
- (d) Define the term *metabolic water*. [2]
- (e) Describe the form of defective absorption known as phenylketonuria and explain the dietary implications for a person with phenylketonuria. [4]
- (f) Protein is found in red meat. Name and give the functions of **four** other nutrients found in red meat. [4]
- 2 (a) With the aid of a diagram, describe the chemical structure of a triglyceride. [3]
- (b) Explain the roles of the oesophagus, stomach, pancreas, gall bladder and duodenum in the digestion of lipids. [5]
- (c) Explain the benefits of **three** different types of omega fatty acid. For **two** of these types of omega fatty acid, give a different food source. [7]
- (d) Discuss the role of vitamin E in the diet. [3]
- (e) Describe the function of lecithin and give an example of its use in food products. [4]
- (f) Describe how to store olive oil. Give reasons for your answer. [3]
- 3 (a) Discuss the relationship between diet and health for an adult. [10]
- (b) Define the term *energy balance* and explain how food labelling can help a person to achieve energy balance. [3]
- (c) Describe how people living in your local community can access nutritional education. [3]
- (d) Define the term *convenience food* and explain how a diet of convenience foods could be a healthy option. [5]
- (e) Some convenience foods are fortified. Give **four** different examples of foods that are fortified and state the specific benefit of each to the consumer. [4]

- 4 (a) Discuss why different fats and oils have different melting points, smoke points and plasticities. [8]
- (b) Give an account of:
- (i) when a person should have an increased water intake; [3]
  - (ii) beriberi; [3]
  - (iii) megaloblastic and pernicious anaemia; [5]
  - (iv) why and where energy is stored in the body. [3]
- (c) (i) Write the chemical equation for respiration. [2]
- (ii) Explain the role of iodine in metabolism. [1]

**Section B**

Answer **two** questions.

- 5 (a) (i) Identify **two** sources of *E. coli* infection. Describe the symptoms of food poisoning. [2]  
(ii) Explain how *E. coli* infections can be prevented. [2]
- (b) Suggest how modern food production methods could cause an increase in the incidence of food poisoning. [3]
- (c) Define the term *cross-contamination* and explain how it can be avoided by following kitchen hygiene guidelines. [4]
- (d) Give examples of chemicals that can contaminate foods. Describe situations when chemical contamination of foods could occur. [6]
- (e) Discuss possible health problems associated with local and global food and water supplies. Suggest some possible solutions. [8]
- 6 (a) (i) Using examples, define the term *cash crops*. [2]  
(ii) Evaluate the impact on less economically developed countries of the increase in the production of cash crops. [4]
- (b) Discuss the ethics to consider when choosing supermarket foods. [10]
- (c) Using examples, explain how different foods and livestock can be transported safely. [4]
- (d) Give **six** pieces of advice on how to use an electric food processor safely. [3]
- (e) Explain the term *work triangle* in relation to kitchen planning. [2]
- 7 (a) (i) Give details of the recipe and method for making flaky pastry. [5]  
(ii) Outline the functions of the ingredients used to make flaky pastry. [5]
- (b) (i) Explain how heat is transferred to the flaky pastry when it is baked. [5]  
(ii) Outline how to use the oven safely, efficiently and economically when baking the flaky pastry. [6]  
(iii) State a suitable oven temperature at which to bake flaky pastry. [1]
- (c) Name a baked product that includes the ingredient cream of tartar. Explain the function and working characteristics of cream of tartar. [3]

- 8 (a) Explain how the structure of cellulose means that it is only partially digested by humans. [3]
- (b) Some fruits contain a good supply of a polysaccharide that is used in jam making.
- (i) Name **two** of these fruits. [1]
  - (ii) Name the polysaccharide. [1]
  - (iii) Explain the role of the polysaccharide in jam making. [2]
- (c) Explain how meals planned for vegetarians could include too much non-starch polysaccharide (NSP). Describe the problems that could arise from this. [4]
- (d) Describe the production of a mycoprotein product such as Quorn. [6]
- (e) Outline the nutritional value of a mycoprotein product such as Quorn. [3]
- (f) A mycoprotein product contains the following additives:

<b>silicon dioxide</b>	<b>smoke flavouring</b>	<b>gum arabic</b>	<b>citric acid</b>
<b>potassium chloride</b>	<b>ammonium bicarbonate</b>	<b>tricalcium phosphate</b>	

Select **five** additives from the list and suggest a different use for each in the mycoprotein product. [5]





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