



Queen Margaret University  
EDINBURGH

**SCHOOL OF HEALTH SCIENCES**

**DIVISION OF DIETETICS, NUTRITION AND BIOLOGICAL SCIENCES,  
PHYSIOTHERAPY, PODIATRY, RADIOGRAPHY**

**LEVEL 2 / DIET 2**

**D2155/ Introduction to Food Science**

<b><u>DATE: 28 July 2017</u></b>	<b><u>TIME: 9:30</u></b>
<b><u>WRITING TIME: 2 hours</u></b>	<b><u>READING TIME: 5 minutes</u></b>

**INSTRUCTIONS:**

Candidates should attempt ALL questions in section A. ( 20 marks)

Circle the correct answer.

Candidates should answer 3 questions in section B. (60 marks)

Answer each question in a separate answer book.

**PAPER SETTER:** Julien Lonchamp

**MATRICULATION NUMBER:** \_\_\_\_\_

## Section A

Answer all questions. 2 marks for each question

1. By UK law, what percentage of fat should there be in semi-skimmed milk
  - a. < 1.5%
  - b. 1.5 – 1.8%
  - c. 3.5 - 4.5%
  - d. 5 – 6.5%
  
2. Milk contains a carbohydrate disaccharide called:
  - a) Maltose
  - b) Lactose
  - c) Sucrose
  - d) Fructose
  
3. During the manufacturing of cheddar cheese, ripening and souring takes place when:
  - a) Lactic acid bacteria is added to milk with a subsequent fall in pH.
  - b) Lactic acid bacteria is added to milk with a rise in pH.
  - c) Enzymes are added to milk with a rise in pH.
  - d) Moulds in the milk produce acid, lowering the pH.
  
4. Milk that does not separate into liquid and cream has been
  - a) Pasteurised
  - b) Homogenised
  - c) Sterilised
  - d) Winterised
  
5. Raw or undercooked kidney beans contain a substance that cannot be digested and can cause severe poisoning. What is this substance called:
  - a) Clostridium
  - b) Phytate
  - c) Phytohaemagglutinin
  - d) Sulphuric acid
  
6. Green discolouration on the surface of potatoes indicates the presence of a poisonous alkaloid called:
  - a) Leptin
  - b) Alanine
  - c) Solanine
  - d) Melanine
  
7. The rest period before the slaughtering of an animal is important so that the body stores of \_\_\_\_\_ are not depleted.
  - a) Nitrogen
  - b) Vitamin A
  - c) Fatty acids
  - d) Glycogen

8. Oats lower serum cholesterol by:

- a) Lowering HDL levels
- b) Raising LDL levels
- c) Bile binding action
- d) Transamination

9. Which of the following is not an antioxidant:

- a) Vitamin C
- b) Vitamin D
- c) Vitamin E
- d) Vitamin A

10. Oxidative rancidity is

- a. The process by which peeled potatoes go brown
- b. The process by which fats and oils produce off-flavours
- c. The process by which foods go brown on baking (e.g. the crust on baked bread)
- d. The process by which fruit is ripened

End of section A

Section B over the page.

## Section B

### Answer 3 questions from this section.

1. Fully describe five methods of food preservation used by the food industry. In each case explain the way in which the food preservation method works and give an example of two food stuffs found in supermarkets that use this method of preservation. (20 marks)
  
2. Critically explain what is Hazard Analysis and Critical Control Point (HACCP). (6 marks)  
Outline the seven principles that HACCP is based upon. (7 marks)  
Briefly discuss HACCP's limitations. (7 marks)
  
3. Explain the difference between a health claim and a nutrient claim, and their allowed use in food marketing. Your answer should cover definition and regulations applying to their current use in food marketing. Give one example of a health claim and one nutrient claim for an existing, commercial product. (20 marks)
  
4. Explain and state 7 different uses of eggs by the food industry. (7 marks)  
  
Explain oxidative rancidity, and what measures can be taken to prevent it. (13 marks)
  
5. Describe the human sensory factors that can affect food preference. (10 marks)  
Discuss the different types of sensory tests and analysis that may be used to evaluate the acceptability of a food item. (10 marks)