



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

<u>DATE: 24 July 2018</u>	<u>TIME: 2.00 pm</u>
<u>WRITING TIME: 2 hours</u>	<u>READING TIME: 5 minutes</u>

INSTRUCTIONS:

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

Circle the correct answer.

Candidates should answer 3 questions out of the 4 ones presented 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. 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.

2. The functional phospholipids present in egg yolk are
 - a. Glycerols
 - b. Sterols
 - c. Monoglycerides
 - d. Lecithins

3. Unsaturated fatty acids are characterised by _____ in comparison with saturated fatty acids
 - a. Longer hydrocarbon chains
 - b. Lower susceptibilities to oxidative rancidity
 - c. Lower melting points
 - d. Higher concentrations

4. Which one of these products is an oil-in-water emulsion:
 - a. Mayonnaise
 - b. Butter
 - c. Egg white
 - d. Margarine

5. The main functional properties of egg yolk are
 - a. Foaming and emulsifying
 - b. Foaming and gelling
 - c. Emulsifying and gelling
 - d. Foaming, emulsifying and gelling

6. Hydrogenation of oils transform
 - a. Short-chain fatty acids into long-chain fatty acids
 - b. Long-chain fatty acids into short-chain fatty acids
 - c. Cis-unsaturated fatty acids into Trans-unsaturated fatty acids
 - d. Trans-unsaturated fatty acids into Cis-unsaturated fatty acids

7. DFD (Dark Firm Dry) defects in meat products post-mortem are due to depletion of:
- Glucose
 - Glycogen
 - Proteins
 - Amino-acids
8. Gelatin is formed by partial hydrolysis of
- Collagen
 - Starch
 - Gluten
 - Egg white
9. The major functional whey protein is
- Lysozyme
 - Glutenin
 - Casein
 - Beta-lactoglobulin
10. Milk that does not separate into liquid and cream has been
- Pasteurised
 - Homogenised
 - Sterilised
 - Winterised

Section B

Answer 3 questions out of the 4 ones presented in this section.

Question 1

1.a. Define the main groups of sensory attributes of food products, describe how we perceive them and provide a characteristic example of each attribute in food formulations **(10 marks)**

1.b. Describe the different types of sensory analysis tests that can be used to evaluate food products, highlight the specificities of each test **(10 marks)**

Question 2

2.a. Explain what HACCP is and its potential benefits for a food business **(6 marks)**

2.b. Outline the seven principles that HACCP is based upon **(7 marks)**

2.c. Briefly discuss HACCP's limitations **(7 marks)**

Question 3

Fully describe the different steps of the breadmaking process, highlighting the different ingredients and mechanisms involved at each step **(20 marks)**

Question 4

4.a. Define the different storage conditions parameters that can be found on food labels **(4 marks)**

4.b. Define the different types of nutritional information parameters (contents, labels, guidelines, claims) that can be found on food labels **(16 marks)**

End of Examination