SCHOOL OF HEALTH SCIENCES

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

LEVEL 2 DIET 1

MODULE CODE: D2155

MODULE TITLE: Introduction to Food Science

DATE: 21/12/2018	TIME: 9.30AM
WRITING TIME: 2 hours	READING TIME: 5 minutes

INSTRUCTIONS:

Candidates should answer ALL 4 questions in the answer books provided.

(25 marks per question)

PAPER SETTER: Julien Lonchamp

Answer all 4 questions (25 marks per question).

Question 1

a. Define the different types of colloidal systems encountered in food products and define the functional properties of food ingredients related to each of these systems. **(8 marks)**

b. Explain the physicochemical mechanisms leading to each of these functional properties. **(8 marks)**

c. Provide three examples of functional ingredients (one protein, one carbohydrate and one lipid). For each of these ingredients provide an example of food product they contribute to and explain their contribution to this product. **(9 marks)**

Question 2

a. Describe the different types of heat transfer operations occurring in food manufacturing and their main characteristics. **(12 marks)**

b. Explain the possible negative impact of the different types of heat transfer on various aspects of the quality of food products. **(7 marks)**

c. Provide three examples of adapted processes or optimised practises the food industry can follow to minimise this impact on product quality. Explain how each of these processes/practises minimises quality loss and provide an example of relevant food product for each. **(6 marks)**

Question 3

a. Describe the different steps in the manufacturing process of cheese and their main characteristics. **(15 marks)**

b. Describe the different types of cheese ripening processes and their main characteristics. Provide an example of cheese product obtained with each process. **(10 marks)**

Question 4

a. Describe the different steps involved in the sensory-led new product development (NPD) process and their main characteristics. **(9 marks)**

b. Provide three examples of sensory analysis tests that are used during this NPD process, define what their main characteristics are and at which steps of the NPD process they are used.

(9 marks)

c. Define four aspects of due diligence related to this process and define three NPD market strategies that can be employed by food companies **(7 marks)**

End of Examination