

CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ

Winter Examinations 2014

Module Title: Biomanufacturing Science

Module Code: BIOL8012

School: Science and Informatics

Programme Title: BSc (Hons) in Nutrition and Health Science
BSc (Hons) in Herbal Science

Programme Code: SNHSC_8_Y4 / SHERB_8_Y4

Internal Examiner: Dr. Máire Begley

External Examiner: Prof. Torres Sweeney

Instructions: Answer **Q1** and **two** other questions.

Q1 is worth 40 marks. All other questions carry equal marks (30 marks).

Duration: 2 hours

Sitting: Winter 2014

Requirements for this examination:

Note to Candidates: Please check the Programme Title and the Module Title to ensure that you have received the correct examination paper.
If in doubt please contact an Invigilator.

Q1. COMPULSORY QUESTION

Write comprehensive notes on **four** of the following:

- (a) Changes in consumer requirements and food industry reactions.
- (b) Food extrusion.
- (c) Hurdle technology.
- (d) Stability studies on pharmaceuticals.
- (e) Plant genetic engineering for biofuel production.
- (f) Possible sources of error associated with human sensory evaluation panels.

(4 x 10 marks)

Q2. Write an essay on packaging. In your essay describe at least five functions of packaging, and explain with the aid of specific examples what active packaging and intelligent packaging are. **(30 marks)**

Q3.

- (a) Write a comprehensive account of High Pressure Processing (HPP). In your answer describe the process, state what foods the process is suitable for and outline the advantages and disadvantages of the method.

(20 marks)

- (b) Outline the potential applications of bacteriocins in the food and pharma industries. **(10 marks)**

Q4.

- (a) A genetically modified potato trial is underway by Teagasc in Oakpark in Carlow. Explain how the potatoes were genetically modified. **(6 marks)**

- (b) Describe with the aid of specific examples the risks and concerns associated with transgenic crops. **(12 marks)**

- (c) Outline the methods available for the detection of genetically modified organisms.

(12 marks)