

CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ

Autumn Examinations 2015/2016

Module Title: Biomanufacturing Science

Module Code: BIOL8012
School: Science and Informatics
Programme Title: BSc in Nutrition and Health Science

Programme Code: SNHSC_8_Y4

Internal Examiner: Dr. Máire Begley

External Examiner: Dr Eibhlís O'Connor

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

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

Duration: 2 hours

Sitting: Autumn 2016

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) Anti-nutrients
- (b) Hurdle technology.
- (c) Design of a sensory testing lab.
- (d) Methods available for the detection of genetically modified organisms.
- (e) Stability studies on pharmaceuticals.
- (f) Genetically modified plants with increased resistance to insects.

(4 x 10 marks)

Q2.

(a) Write comprehensive overviews of the following types of packaging:

- edible food packaging.
- modified atmosphere packaging.
- antimicrobial packaging.

(15 marks)

(b) Explain with the aid of specific examples what intelligent packaging is.

(15 marks)

Q3.

(a) Describe the proposed ecological functions of bacteriocins in producer microorganisms. **(6 marks)**

(b) Outline the mode of action of Class I bacteriocins. **(6 marks)**

(c) List the challenges that face the use of bacteriocins in foods. **(6 marks)**

(d) Describe with the aid of specific examples the potential applications of bacteriocins as human therapeutics. **(12 marks)**

Q4.

Write a comprehensive account of a non-thermal food processing method of your choice. In your answer describe the process, state what foods the process is suitable for and outline the advantages and disadvantages of the method. **(30 marks)**