

**CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

Autumn Examinations 2015

Module Title: Food and Healthcare Biotechnology (CA)

Module Code: BIOL7010

School: Science & Informatics

Programme Title: Bachelor of Science (Honours) in Nutrition & Health Science – Year 3

Programme Code: SNHSC_8_Y3

External Examiner(s): Prof. Torres Sweeney

Internal Examiner(s): Dr Helena Stack

Instructions: Answer question 1 and two other questions.
All questions carry equal marks.

Duration: 2 Hours

Sitting: Autumn 2015

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.

Answer question 1 and two other questions.

Q1. Write short notes on each of the following:

- (i) Yoghurt manufacture (5 marks)
- (ii) Assessing bile tolerance of a probiotic microorganism (5 marks)
- (iii) Malolactic fermentation (5 marks)
- (iv) Calculation of colony forming units (spread plates; give example) (5 marks)

Q2. Write short notes on each of the following:

- (i) Batch fermentations (5 marks)
- (ii) Continuous fermentations (5 marks)
- (iii) Immobilized enzymes (5 marks)
- (iv) One environmental factor affecting bioreactor design (5 marks)

Q3. Write detailed notes on the following:

- (i) L-ascorbic acid biosynthesis (10 marks)
- (ii) Recombinant human insulin biosynthesis (10 marks)

Q4. Write short notes on each of the following:

- (i) Brewing in the beer process (5 marks)
- (ii) Amylase in food processing (5 marks)
- (iii) Polymerase Chain Reaction (PCR) (5 marks)
- (iv) Biotechnology and patents (5 marks)