

**CORK INSTITUTE OF TECHNOLOGY**  
**INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

**Autumn Examinations 2016**

**Module Title: Food and Healthcare Biotechnology**

**Module Code:** BIOL 7010

**School:** Biological Science

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

**Programme Code:** SNHSC\_8\_Y3

**External Examiner(s):** Dr. Tom O Connor  
**Internal Examiner(s):** Dr Helena Stack

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

Answer question 1 and two other questions.

Q1. Write short notes on each of the following:

- (i) rChymosin production (5 marks)
- (ii) Method to assess acid tolerance of a probiotic microorganism (5 marks)
- (iii) Yoghurt manufacture (5 marks)
- (iv) Calculation of colony forming units (10µl spot plates; spread plates-show calculations for both) (5 marks)

Q2. Write an essay on gene expression (Transcription & Translation) using diagrams where appropriate. (20 marks)

Q3. Write detailed notes on the following:

- (i) Recombinant human insulin biosynthesis; two chain method vs. proinsulin method (10 marks)
- (ii) L-ascorbic acid biosynthesis (10 marks)

Q4. Write short notes on each of the following:

- (i) Batch fermentation (5 marks)
- (ii) Amylase in food processing (5 marks)
- (iii) Bacterial Starter cultures (5 marks)
- (iv) Prebiotics (5 marks)