

**CORK INSTITUTE OF TECHNOLOGY  
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

**Semester 1 Examinations 2013/2014**

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| <b>Module Title:</b> | <b>Module Title: Food and Healthcare Microbiology</b> |
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**Module Code:** BIOM7003

**School:** Science

**Programme Title:** Bachelor of Science in Food Science and Technology - Year 3  
Bachelor of Science (Honours) in Nutrition & Health Science - Year 3  
Bachelor of Science (Honours) in Herbal Science - Year 3

**Programme Code:** SFSTE\_7\_Y3  
SNHSC\_8\_Y3  
SHERB 8 Y3

**External Examiner(s):** Dr Gillian Gardiner  
**Internal Examiner(s):** Ms. Richenda Kiernan

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

**Duration:** 2 Hours

**Sitting:** Winter, 2013

**Requirements for this examination:**

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| <p><b>Note to Candidates:</b> Please check the Programme Title and the Module Title to ensure that you have received the correct examination.<br/>If in doubt please contact an Invigilator.</p> |
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**Answer question 1 and two other questions.**

- Q1. (a) Write a short note on microbial growth in food under the following headings:
- (i) Synergistic growth (4 marks)
  - (ii) Antagonistic growth (4 marks)
- (b) Explain what is meant by a pure culture and give an example. (3 marks)
- (c) Write a short note on the following:
- (i) Pour Plate (3 marks)
  - (ii) Turbidity Measurements (3 marks)
  - (iii) Endospores (3 marks)
- Q2. Staphylococcus aureus is among the top five pathogens contributing to domestically acquired foodborne illness (Centre for Disease Control). Discuss (20 marks)
- Q3. Discuss the following intrinsic parameters affecting microbial growth:
- Water Activity ( $A_w$ ) (5 marks)
  - Oxygen (5 marks)
  - pH (5 marks)
  - Growth factors and inhibitors in food (5 marks)
- Q4. (a) Discuss the role of LAB in cheese manufacture (8 marks)
- (b) List five food fermentations (3 marks)
  - (c) Write a detailed note on Probiotics (6 marks)
  - (d) Bacteriocins are antimicrobial peptides. Briefly discuss (3 marks)