

Cork Institute of Technology

Bachelor of Science Applied Biosciences & Biotechnology - Award

(NFQ Level 7)

Spring 2007

Biotechnology

(Time : 3 Hours)

Answer 5 Questions in total.

Answer 2 questions from section A and 3

Questions from section B.

Examiners: Dr Roy Slater

Ms M. Lane

Dr. T. Beresford

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Use separate answer books for each section

Section A

- Q1. Write brief notes on each of the following;
Homo-and Hetero-lactic acid fermentation.
List 2 lactic acid bacteria(LAB)strains and their associated food fermentations.
- Q2. Define the term starter culture and outline the techniques used for culture preservation.
- Q3. Define the terms;
Sterilisation
Pasteurisation
UHT
CIP

Section B

Q4.(a) Write an account of;

Continuous fermentations

Fed Batch fermentations

Batch fermentations

(12 marks)

- (b) List the different types of fermenters and bioreactors that are used in biotechnology, and describe the design features of a typical aerobic fermenter. (8 marks)

Q5. (a) Explain what is meant by the terms “Traditional Biotechnology” and “Modern Biotechnology” (4 marks)

- (b) Write an account of any Biotechnology process you have studied and indicate whether you consider it a traditional or modern process. (16 marks)

Q6. (a) Explain what is meant by Down stream processing. (4 marks)

- (b) Write an account of the steps involved in Down stream processing in a Biotechnology Industry. (16 marks)

Q7. (a) List the tools of recombinant DNA technology that are important in cloning genes for a Biotechnology process. (10 marks)

- (b) Briefly outline the steps that were involved in the cloning of any pharmaceutical product with which you are familiar. (10 marks)