

BINDURA UNIVERSITY OF SCIENCE EDUCATION
BIOLOGICAL SCIENCES DEPARTMENT
BScBZH
FOOD BIOTECHNOLOGY (BTEC412)

EXAMINATION

2 HOURS (100 MARKS)

JUN 2021

INSTRUCTIONS TO CANDIDATES

Answer **FOUR** questions. You **MUST** answer QUESTION 1(Section A) and any **THREE** questions from section B. Each question carries **25 MARKS**. Where a question contains sub-divisions, the mark value of each sub-division is given in brackets. Illustrate your answer where appropriate with large clearly labelled diagrams. You should not spend more than thirty minutes on each question

SECTION A (COMPULSORY)

1. (a) Describe what is food biotechnology and explain the 3 categories of food biotechnology. (15 marks)
- (b) Describe what you understand by DNA sequencing using the 2 main sequencing methods. (10 marks)

SECTION B

2. Write short notes on any **FIVE** of the following:
 - (a) Benefits of biotechnology (5 marks)
 - (b) Primary sources of microorganisms associated with food (5 marks)
 - (c) Fermentation (5 marks)
 - (d) Genetically modified foods (5 marks)
 - (e) Enzymes in food industries (5 marks)
 - (f) Enzyme Co-factors (5 marks)
3. (a) Describe the importance of yeasts in food industry and explain any 3 types of yeasts used in the food industry. (15 marks)
- (b) Describe lactic acid fermentation and ethanol fermentation. (10 marks)
4. (a) Give a detailed outline of the process of wine making. (15 marks)
- (b) Describe the importance of the Maillard reaction. (10 marks)
5. Describe the beer brewing process. (25 marks)
6. Write an essay on the merits and demerits of genetically modified foods in the society. (25 marks)

END OF EXAMINATION QUESTION PAPER