

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATION

RESIT /SPECIAL EXAMINATION

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN FOOD
SCIENCE AND TECHNOLOGY**

FOST 425: APPLICATIONS OF ENZYME TECHNOLOGY IN FOODS

STREAMS:

TIME: 2 HOURS

**DAY/DATE: WEDSDAY 03/11/2021
P.M**

11.30 A.M – 1.30

INSTRUCTIONS:

**Answer all questions in section A and any other two in section B
SECTION A (30 MARKS)**

1a) Explain various methods that enhance immobilization of enzymes in genetic engineering.
(4marks)

b) The specificity of enzymes is determined by their three-dimensional interaction models. Briefly describe the major interactive models of enzymes.
(4marks)

2a) Briefly explain the importance of enzyme engineering and how it can be carried out.
(4marks)

b) Explain factors that facilitate effectiveness of enzyme activity in food industry (5 marks)

3a) Citing specific examples, highlight key differences between intracellular and extracellular enzymes.
(4marks)

b) Explain the importance of a bioreactor during production of enzymes.
(2marks)

4a) Briefly explain reasons why we should embrace application of enzymes in food industry.
(4marks)

b) As a chief food technologist in a bakery industry, what are the basic steps to take into consideration during production of pure enzymes?
(3marks)

SECTION B (40 MARKS)

5a) Citing specific examples, discuss the technological applications of enzymes in the current world.
(12marks)

b) Explain why enzymes are preferably extracted from microbes rather than the plant and animal sources.
(8marks)

6a) Discuss the commercial production of enzymes by surface and submerged cultivation; highlighting the roles played at each stage
(12marks)

b) Explain advantages and disadvantages of carrying out enzyme immobilization in any given food industry
(8marks)

7a) Discuss advantages and disadvantages of using enzymes in the brewing industry
(12mark)

b) With clear illustrations, explain the main tools that are used protein engineering
(8marks)
