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University Examinations 2022/2023

THIRD YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN BIOCHEMISTRY

SHC 3300: ENZYMOLOGY

DATE: AUGUST 2023

TIME: 2 HOURS

INSTRUCTIONS: Answer question *one* and any other *two* questions

QUESTION ONE (30 MARKS)

- a) Describe a model of enzyme action. (4 marks)
- b) Differentiate between 'ribozyme' and 'abzyme'. (2 marks)
- c) Outline the assumptions of Michaelis-Menten kinetics. (5 marks)
- d) Outline the significance of K_m (Michaelis constant) and V_{max} (maximum reaction rate achieved by the system) values. (2 marks)
- e) Explain how regulatory enzymes are modulated. (4 marks)
- f) Illustrate irreversible enzyme inhibition e.g. DPF. (4 marks)
- g) Illustrate the substrate-binding patterns in bisubstrate enzyme reactions. (4 marks)
- h) Outline the functional groups in proteins. (5 marks)

QUESTION TWO (20 MARKS)

Discuss non-competitive and uncompetitive inhibition.



MUST is ISO 9001:2015 and



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QUESTION THREE (20 MARKS)

Describe enzymatic reactions that require coenzymes.

QUESTION FOUR (20 MARKS)

Discuss the industrial applications of enzymology.

