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University Examinations 2024/2025

THIRD YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE BACHELOR OF
SCIENCE IN BIOCHEMISTRY

SHC 3301: BIOCHEMICAL BACTERIOLOGY AND MYCOLOGY

DATE: JANUARY 2025

TIME: 2 HOURS

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

QUESTION ONE (30 MARKS)

- a) Describe briefly the structure of gram negative bacterial cell wall (6 marks)
- b) Describe briefly the anaplerotic glyoxylic acid cycle (6 marks)
- c) Describe briefly degradation of proline in *Clostridium sticklandii* (6 marks)
- d) Draw a well labelled fungal cell wall and cell membrane structure (6 marks)
- e) Describe the structure of peptidoglycan found in gram positive bacteria (6 marks)

QUESTION TWO (20 MARKS)

Describe four phases of a microbial growth curve observed when microbes are grown in a batch culture (20 marks)

QUESTION THREE (20 MARKS)

Discuss mechanisms of bacterial pathogenicity (20 marks)

QUESTION FOUR (20 MARKS)

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Using structural illustrations, describe the biosynthesis of glycine from 3-phosphoglycerate in bacteria (20 marks)