

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN
BIOCHEMISTRY**

BIOC 331: BIOCHEMISTRY OF PATHOGENIC BACTERIA AND FUNGI

STREAMS: BIOC

TIME: 2 HOURS

DAY/DATE: TUESDAY 11/12/2018

8.30 A.M. – 10.30 A.M.

INSTRUCTIONS:

- Answer question ONE and any TWO questions
- Do not write on the question paper.

QUESTION ONE (30 MARKS)

- (a) Using structural formulae, describe biosynthesis of peptidoglycan and its variation among Grampositive bacteria. (9 marks)
- (b) Discuss the structure and mode of action of diphtheria toxin. (6 marks)
- (c) (i) Define ergotism (2 marks)
(ii) Give structure of Ergotamine and explain its clinical relevance. (7 marks)
- (d) List and describe major immunoassay tests used to diagnose Mycobacteria tuberculosis. (6 marks)

QUESTION TWO

- (a) Describe pathological effect of bacterial endotoxins on human health. (8 marks)
- (b) Explain toxigenic activity of the following bacteria exotoxins:
- (i) Shiga toxin (4 marks)
(ii) Anthrax toxin (EF) (4 marks)
(iii) Toxic shock syndrome toxin (TSST-1) (4 marks)

QUESTION THREE (20 MARKS)

- (a) Describe the etiology and pathogenicity of sporotrichosis. (6 marks)
- (b) List the diseases and clinical features associated with candidiasis. (6 marks)
- (c) Explain the microbial strategies to survive starvation during stationary phase. (8 marks)

QUESTION FOUR (20 MARKS)

Discuss *Aeromonas hydrophila* under the following headings;

- (a) Occurrence and transmission (6 marks)
 - (b) Virulence (6 marks)
 - (c) Clinical significance (6 marks)
 - (d) Treatment (2 marks)
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