

CHUKA



UNIVERSITY

**SUPPLEMENTARY/ SPECIAL EXAMINATIONS**

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

**BIOC 331: BIOCHEMISTRY OF PATHOGENIC BACTERIA AND FUNGI**

**STREAMS: BSC (BIOC)**

**TIME: 2 HOURS**

**DAY/DATE: WEDNESDAY 03/02/2021**

**5.00 PM – 7.00 PM**

**INSTRUCTIONS**

- (i) Answer Question ONE and any TWO questions**
- (ii) Do not write on the question paper**

**QUESTION ONE (30 Marks)**

- (a) Using structural formulae, describe biosynthesis of murein and its variation among eubacteria. (9 Marks)
- (b) Discuss the structure and mode of action of diphtheria toxin. (6 Marks)
- (c) (i) What is 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 (20 Marks)**

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

**QUESTION THREE (20 Marks)**

- (a) Describe the etiology and pathogenicity of blastomycosis. (9 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 *Streptococcus pyogenes* under the following headings;

- (a) Occurrence and transmission (6 Marks)
  - (b) Virulence (6 Marks)
  - (c) Clinical significance (6 Marks)
  - (d) Diagnosis (2 Marks)
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