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CHUKA



UNIVERSITY

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**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD DEGREE OF BACHELOR OF SCIENCE IN  
BIOC 331: BIOCHEMISTRY OF PATHOGENIC BACTERIA AND FUNGI**

**STREAMS: BIOC**

**TIME: 2 HOURS**

**DAY/DATE: WEDNESDAY 4/12/2019**

**8.30 A.M – 10.30 A.M**

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**INSTRUCTIONS**

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

**Do not write on the question paper**

**QUESTION ONE (30 MARKS)**

1. (a) Using structural formulae, describe biosynthesis of peptidoglycan by pathogenic bacteria. [6 marks]
- (b) Draw the structure of Aflotoxin B1 and describe its pathological effect on human beings. [6 marks]
- (c) (i) Give clinical manifestations of ergotism. [4 marks]
- (ii) Give structure of Ergotamine and explain its clinical relevance. [4 marks]
- (d) List and describe major laboratory tests used to diagnose diphtheria. [6 marks]
- (e) List four bacteria inoculation techniques and their purposes. [4 marks]

**QUESTION TWO (20 MARKS)**

- (a) Describe pathological effect of bacterial lipopolysaccharide on human health.

[8

marks]

(b) Explain toxigenic activity of the following microbial toxins;

- (i) Zearalenone [4 marks]
- (ii) Pertussis toxin [4 marks]
- (iii) Toxin shock syndrome toxin (TSST-1) [4 marks]

**QUESTION THREE (20 MARKS)**

- (a) Describe the etiology and pathogenicity of maduromycosis. [9 marks]
- (b) Describe disease conditions caused by *chlamydia trachomatis*. [6 marks]
- (c) Explain the microbial strategies to survive starvation during stationary phase. [8 marks]

**QUESTION FOUR (20 MARKS)**

Discuss *tuberculosis* under the following headings;

- (a) Pathogenesis [12 marks]
  - (b) Susceptible population [3 marks]
  - (c) Treatment and prevention [5 marks]
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