

CHUKA



UNIVERSITY

UNIVERSITY SUPPLEMENTARY/SPECIAL EXAMINATIONS.

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

BIOC 302: BIOCHEMICAL BACTERIOLOGY & MYCOLOGY

STREAMS: BIOC

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 12/09/2018

11.30 A.M -1.30 P.M

INSTRUCTIONS

- Answer All the Questions
- Do not write on the question paper

QUESTION ONE - [30 MARKS]

- (a) (i) Using structural and chemical formulae explain how Archaeobacteria have modified Entner-Doudoroff glycolytic pathway to meet their cellular requirements. [6 Marks]
- (ii) Using specific examples, describe autotrophic methanogenesis in Archaeobacteria. [5 Marks]
- (b) Using structural formulae, describe biosynthesis of peptidoglycan and its variation among gram-negative bacteria. [10 Marks]
- (c) Discuss the pathogenesis and treatment of systemic mycoses. [9 Marks]

QUESTION TWO - [20 MARKS]

- (a) Describe Stickland reactions between L-Alanine and L-Glycine by *Clostridium sporogenes*. [6 Marks]
- (b) Discuss modern methods used in aflatoxin analysis. [4 Marks]
- (c) Describe butyric acid fermentation pathway and its industrial importance. [10 Marks]

QUESTION THREE - [20 MARKS]

Discuss **cholera** under the following headings;

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| (a) Etiologies | [4 Marks] |
| (b) Mode of transmission. | [4 Marks] |
| (c) Pathogenesis and virulence | [8 Marks] |
| (c) Laboratory diagnosis and treatment. | [4 Marks] |
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