

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

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

BMED 421: TOXICOLOGY ENVIRONMENTAL PHYSIOLOGY

STREAMS: BMED Y4S1

TIME: 2 HOURS

DAY/DATE: TUESDAY 04/12/2018

11.30 A.M. – 1.30 P.M.

INSTRUCTIONS:

- **Answer question ONE and any OTHER TWO questions.**

QUESTION 1 (COMPULSORY) (30 MARKS)

- Outline the factors which confer the difference in response to a toxicant in a population (individual susceptibility) (5 marks)
- Differentiate between acute and chronic toxicity. (5 marks)
- Why is a point source of pollution easier to identify than a non-point source of pollution? Briefly describe four processes by which environment reduce worst effects of many pollutants. (5 marks)
- Discuss five applications of the knowledge in toxicology. (5 marks)
- Explain five medical importance of detoxification. (5 marks)
- Describe the application of dose-response curves in the study of toxicity of substances. (5 marks)

QUESTION 2 (20 MARKS)

- What is pollution biomarker? (1 mark)
- Discuss the three types of biomarkers (9 marks)

- (c) Discuss five detoxification reactions involving conjugation using specific examples. (10 marks)

QUESTION 3 (20 MARKS)

- (a) Using suitable flowchart describe the fate and effects of toxicants in the body. (10 marks)
- (b) Define toxicodynamics. (1 mark)
- (c) Using a suitable diagram, describe reaction types between a toxicant and target molecule and indicate possible outcomes of this interaction. (9 marks)

QUESTION 4 (20 MARKS)

- (a) Discuss five factors affecting membrane transport of toxicants. (10 marks)
- (b) Describe five membrane transport processes of xenobiotics including their characteristics. (10 marks)
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