CHUKA  **UNIVERSITY**

UNIVERSITY EXAMINATIONS

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

BMET 423: TOXICOLOGY ENVIRONMENTAL PHYSIOLOGY

STREAMS: **TIME: 2 HOURS**

DAY/DATE: MONDAY 27/09/2021 **2.30 P.M. – 4.30 P.M.**

INSTRUCTIONS

- **Answer question one and nay other two questions**

Questions 1 (compulsory) (30 marks)

a) Explain with specific examples 5 possible outcomes of biotransformation of xenobiotics. (5 marks)

b) Highlight 7 properties of human cytochrome P450. (7 marks)

c) Differentiate between bioaccumulation and biomagnification of a toxicant. (2 marks)

d) Briefly explain the importance of toxicological analyses. (4 marks)

e) Explain the difference between primary and secondary air pollutant. Give an example in each case. (4 marks)

f) Outline 4 effects of marine pollution. (4 marks)

g) Describe 4 desirable features of a biomarker used in the toxicological analysis. (4 marks)

Question 2 (20 marks)

a) Explain 5 biochemical tests done in a general clinical toxicology laboratory. (10 marks)

b) Using suitable flowchart, describe the fate and effects of a toxicants in the body. (10 marks)

Question 3 (20 marks)

a) Describe the various membrane transport of xenobiotics. (10 marks)

b) State and explain 5 air pollutants and their effects on human health. (10 marks)

Question 4 (20 marks)

a) Describe 5 detoxification reactions involving conjugation. (10 marks)

b) Using a suitable diagram, describe reaction types between a toxicant and target molecule, and indicate possible outcomes of this interaction. (10 marks)

……