

CHUKA UNIVERSITY
UNIVERSITY EXAMINATIONS, 2019/2020
FIRST SEMESTER EXAMINATION
BMET 423: TOXICOLOGY ENVIRONMENTAL PHYSIOLOGY

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

Questions

Question 1 (Compulsory) (30 marks)

- a) Outline 5 factors that influence the a toxicant in a living organism. (5 marks)

- b) Describe 4 differences between acute and chronic toxicity. (4 marks)

- c) Outline 6 factors which confer the difference in response to a toxicant in a population (individual susceptibility). (6 marks)

- d) 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)

- e) Discuss five applications of the knowledge in toxicology (5 marks)

- f) Highlight five medical importance of detoxification. (5 marks)

Question 2 (20 marks)

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

- b) (i)What is pollution biomarker? (1 mark)

- (ii)Discuss the three types of biomarkers (9 marks)

Question 3 (20 marks)

- a) Discuss the detoxification reactions involving conjugation. (10 marks)

- b) (i)Define toxicodynamics. (1 mark)

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

Question 4 (20 marks)

- a) (i) By use dose response relationship of a xenobiotic (2 marks)
(ii) By use of dose response curve, describe NOEL, LOEL, LD50 and potency. (8 marks)
- b) Describe the various membrane transport of xenobiotics including their characteristics. (10 marks)