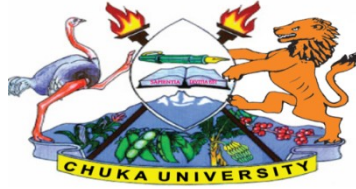


CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATIONS**

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

**CHAL 451: ENVIRONMENTAL TECHNOLOGY AND HEALTH**

**STREAMS:**

**TIME: 2 HOURS**

**DAY/DATE: MONDAY 20/09/2021**

**8.30 A.M – 10.30 A.M**

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**INSTRUCTIONS**

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

**QUESTION ONE (30 MARKS)**

- (a) Briefly explain the following terms ;
- (i) Environmental health [2 marks]
  - (ii) Bioconcentration or biomagnification. [2 marks]
  - (iii) Multi chemical sensitivity. [2 marks]
- (b) Briefly discuss the two types of fume fevers. [4 marks]
- (c) (i) Explain the term fluorosis. [1 mark]
- (ii) Give two reasons of fluorosis. [2 marks]
- (iii) Explain two ways to prevent fluorosis. [2 marks]
- (d) (i) Explain the term risk assessment. [2 marks]
- (ii) Give three health impacts covered by environmental Health Risk Assessment. [3 marks]
- marks]
- (e) List three important elements of risk management framework. [3 marks]
- (f) Give three criteria for evaluating risk Assessment Methods. [3 marks]
- (g) (i) Explain the term ecotoxicology. [2 marks]
- (ii) Give two main objectives of Ecotoxicology. [2 marks]

**QUESTION TWO (20 MARKS)**

- (a) Briefly discuss three basic disciplines that contribute to the field of environmental health. [6 marks]
- (b) Briefly discuss three major contaminants of concern in the general environment and the work place. [6 marks]
- (c) Write notes on the following lung disease.
- (i) Pneumoconiosis [2 marks]
  - (ii) Asbestosis [2 marks]
  - (iii) Silicosis [2 marks]
- (d) Discuss Toxic Inhalation in brief. [2 marks]

**QUESTION THREE (20 MARKS)**

- (a) Differentiate between the following terms:
- (i) Individual and population risk assessment [2 marks]
  - (ii) Qualitative and quantitative risk assessment . [2 marks]
  - (iii) Risk assessment and risk management [2 marks]
- (b) Briefly discuss three stages of environmental health risk assessment (EHRA) . [6 marks]
- (c) Discuss briefly two routes of exposure of a substance to the body. [4 marks]
- (d) Differentiate between the following terms;
- (i) Harm and damage [2 marks]
  - (ii)  $LD_{50}$  and  $ED_{50}/EC_{50}$  [2 marks]

**QUESTION FOUR (20 MARKS)**

- (a) Discuss three stages in risk assessment process. [6 marks]
- (b) Explain the following terms briefly. [6 marks]
- (i) Toxic dose low (TDLO)
  - (ii) Toxic Concentration Low (TCLO)
  - (iii) Lethal Dose Low (LDLO) .

- (c) Briefly discuss two factors influencing toxicity. [4 marks]
- (d) Write the route of biotransformation of ethanol in the liver. [2 marks]
- (e) Differentiate between primary irritants and photosensitizers. [2 marks]
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