

CHAL 451: ENVIRONMENTAL TECHNOLOGY AND HEALTH

INSTRUCTIONS: ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

- a) Write brief notes on the following:
 - i) Environmental epidemiology
 - ii) Toxicology
 - iii) Exposure science
 - iv) Biomarkers (8mks)
- b) Explain the following terms briefly i) Multiple chemical sensitivity ii) Ecotoxicology (4mks)
- c) Differentiate between the following terms:
 - i) Biodegradation and bioaccumulation ii) hazard and hazard assessment iii) Risk assessment and risk management (6mks)
- d) Write short notes on the following:
 - i) Individual and population risk assessments
 - ii) Qualitative and quantitative risk assessment (4mks)
- e) Define the following terms i) LD₅₀ ii) ED₅₀/EC₅₀ iii) NOEL iv) LOED/LOE (4mks)
- f) Discuss two routes of exposure of a substance to the body (4mks)

QUESTION TWO (20 MARKS)

- a) Discuss four environmental health concerns (8mks)
- b) Discuss three hazards in industry (6mks)
- c) Explain the following occupational lung diseases briefly i) pneumoconiosis ii) Asbestosis (4mks)
- d) Discuss the following hazards briefly i) Mechanical hazards ii) Biological hazards (2mks)

QUESTION THREE (20 MARKS)

- a) Discuss briefly three emerging issues in environmental health (6mks)
- b) Write brief notes on the following environmental diseases, include symptoms, treatment and prevention i) Fluorosis ii) Malaria (4mks)
- c) i) Define risk assessment

- ii) Write down the health impact scope of environmental health risk assessment (2mks)
- d) Explain the Dose-Response relationship (2mks)
- e) i) Define antagonist chemicals in relation to toxicology (1mk)
ii) Discuss briefly the four types of antagonists (4mks)

QUESTION FOUR (20 MARKS)

- a) Discuss three stages of environmental health risk assessment (6mks)
- b) Discuss three factors influencing toxicity (6mks)
- c) Write brief notes of the following i) Mutagenic ii) Carcinogenic iii) Tetragenic (6mks)
- d) Using an example discuss the biotransformation of a toxicant (2mks)