

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

FOURTH YEAR EXAMINATION FOR THE AWARD OF DEGREE
OF BACHELOR OF SCIENCE (CHEMISTRY)

CHEM 445: ENVIRONMENTAL CHEMISTRY II

STREAMS: BSC (CHEM)

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 06/12/2017

11.30 A.M. – 1.30 P.M.

INSTRUCTIONS:

- Answer question ONE and any other TWO questions
- Do not write anything on the question paper

QUESTION ONE (30 MARKS)

- (a) Give five (5) units in which air pollutants and air quality parameters are expressed. [5 marks]
- (b) Briefly describe electrochemical analysis of carbon monoxide gas from atmosphere. [5 marks]
- (c) Explain auditory effects of noise pollution. [5 marks]
- (d) Describe how water hardness is determined using EDTA method. [5 marks]
- (e) Briefly explain mutagenesis and give three examples. [5 marks]
- (f) What are the major components of environmental management [5 marks]

QUESTION TWO (20 MARKS)

- (a) With relevant diagram and equations, describe how sulphur dioxide is analyzed using bromocoulometric analyzer. [10 marks]
- (b) State and briefly describe five (5) important aspects to be considered for design of EIA. [10 marks]

QUESTION THREE (20 MARKS)

- (a) Discuss how dissolved oxygen may be determined by Winkler titration. [10 marks]
- (b) Tickling fitters are used for biological treatment of waste water. What determines its efficiency and what are its advantages and disadvantages? [10marks]

QUESTION FOUR (20 MARKS)

(a) How are ozone, mercury and carbon monoxide toxic to human. [10 marks]

(b) With an aid of a diagram, discuss fabric filters that are used to clean gaseous effluents.

[10 marks]
