

CHUKA



UNIVERSITY

SUPPLEMENTARY/ SPECIAL EXAMINATIONS

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

BIOC 314: ENVIRONMENTAL BIOCHEMISTRY

STREAMS: BSC (BIOC)

TIME: 2 HOURS

DAY/DATE: MONDAY 01/02/2021

2.30 PM – 4.30 PM

INSTRUCTIONS:

Answer ALL questions

Questions (30 marks)

- a) Distinguish between the following terms:
- (i) In situ and ex situ bioremediation (4 marks)
 - (ii) Bioaccumulation and biomagnification (4 marks)
- b) Giving an example of the heavy metal pollutant, explain any 6 sources of these pollutants (6 marks)
- c) Give the major sources of freons (3 marks)
- d) (i) Give two novel coenzymes discovered in methanogens (2 marks)
(ii) State the main food substrates for methylotrophic methanogens (2 marks)
- e) Explain eutrophication of water and give its significance (4 marks)
- f) Describe the threats posed by depletion of the ozone layer (5 marks)

Question 2 (20 marks)

- a) Describe the five steps of in situ bioremediation (10 marks)
- b) Illustrate the sulphur cycle and give its importance (10 marks)

Question 3 (20 marks)

c) Describe in details the carbon cycle (10 marks)

d) Describe the steps in waste water treatment (10 marks)
