

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATION  
RESIT/SPECIAL EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE  
BIOC 314: ENVIRONMENTAL BIOCHEMISTRY

STREAMS:

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 05/05/2021

11.30 A.M – 1.30 P.M

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**INSTRUCTIONS:**

**Answer ALL questions**

**Questions (30 marks)**

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

**2. Question 2 (20 marks)**

- a) Describe in details the carbon cycle (10 marks)
- b) Describe the steps in waste water treatment (10 marks)

**3. Question 3 (20 marks)**

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