



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2010/2011

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE

HFN 205: ENVIRONMENTAL ISSUES IN NUTRITION

DATE: FRIDAY, 8TH APRIL 2011

TIME: 8.00 A.M. - 10.00 A.M.

INSTRUCTIONS:

Answer ALL Questions in Section ONE. In Section TWO, answer Question ONE.

SECTION ONE: 20 MARKS

1. Giving examples, define the following terms
 - a) Biodegradation (2 marks)
 - b) Biomagnification (2 marks)
 - c) Environmental diagnosis (2 marks)
2. Using Dandora Dumpsite – Nairobi as your case study, describe the implications of environmental pollution on human health. (5 marks)
3. Using a well labeled diagram, explain the fate and effects of environmental xenobiotics on the human body. (5 marks)
4. While outlining the differences between bioconcentration and bioaccumulation, state factors that influence their occurrence. (4 marks)

SECTION TWO: 50 MARKS

1. a) Describe the process of biotransformation in the human body. (8 marks)
b) Discuss the roles of biotransformation process in the human body and outline its merits and demerits. (8 marks)
c) Discuss the effects of poor nutrition on biotransformation of toxic substances in the human body. (4 marks)
2. a) Explain the reasons for which the process of biodegradation is better than chemical or physical processes. (2 marks)
b) Explain factors affecting the biodegradation of organic wastes. (5 marks)
c) Discuss stages involved in anaerobic biodegradation, and explain where this type of biodegradation can be applied. (8 marks)
3. a) Discuss the following forms of bioremediation
i) Biostimulation (3 marks)
ii) Bio-augmentation (3 marks)
iii) Phytoremediation (3 marks)

b) Outline the 6 major advantages and disadvantages of bioremediation. (6 marks)
4. The importance and relevance of biomonitors, rather than man-made equipment, is justified by the statement: “There is no better indicator of the status of a species or a system than a species or system itself”. Discuss. (15 marks)