



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE
(ENVIRONMENTAL HEALTH)

HEH 312: ENVIRONMENTAL CHEMISTRY II

DATE: Friday, 2nd February, 2018

TIME: 8.00 a.m. - 10.00 a.m.

INSTRUCTIONS:

- Answer **ALL** questions in Section A.
- Answer question **TWO** and any other **TWO** questions in Section B.

SECTION A

- Distinguish between oxidation and reduction in terms of electron transfer. (4 marks)
 - Briefly describe the following as used in environmental chemistry.
 - Soil acidification (1 mark)
 - Homopolymers (1 mark)
 - Turbidity (1 mark)
 - Oligotrophic lake (1 mark)
 - Distinguish between Ostwald process and Haber process. (4 marks)
 - Giving relevant examples, distinguish between addition and condensation Polymers. (4 marks)
 - Describe four environmental impacts of plastic bags that have been washed through storm water drains into a waterway. (4 marks)

SECTION B

- Answer question **TWO** and any other **TWO** questions.
- Question **TWO** carries 20 marks, the other questions carry 15 marks each.

2. Increased nutrient flows into shallow coastal marine environments which has been witnessed in the Gulf of Mexico and the Baltic Sea have resulted in wide scale anoxia (dead zones). Discuss this phenomena. Describe any **five** methods which can be used to mitigate the above problem. (20 marks)
3. a) Using chemical equations, describe the Contact process. (10 marks)
b) Describe the environmental health implications of Contact process. (5 marks)
4. a) Using chemical equations, discuss the industrial manufacture of ammonia gas. (10 marks)
b) Briefly describe the environmental health problems associated with release of ammonia gas into the atmosphere. (5 marks)
5. a) Using chemical equations, describe the process of making soaps. (10 marks)
b) Briefly discuss environmental problems associated with liquid waste containing high concentrations soaps. (5 marks)
6. a) Using a clearly diagram, describe the industrial extraction of Sulphur. (10 marks)
b) Discuss the environmental health effects associated with extraction of Sulphur. (5 marks)