SOUTH EASTERN KENYA UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018

SECOND SEMESTER EXAMINATIONS FOR THE DEGREE OF BACHELOR OF SCIENCE AQUATIC SCIENCE

WAS 304: AQUATIC ECOTOXICOLOGY

DATE: 16TH APRIL, 2018   **TIME: 1.30-3.30PM**

INSTRUCTIONS

  i.   Answer *ALL* questions in **SECTION A**
 ii.   Answe*r ANY TWO* questions from **SECTION B**
iii.   *Illustrate your answers where appropriate*

SECTION A (30 MARKS)

1. Define the following as used terminologies as used in ecotoxicology   **(5 marks)**

   i.   Toxicity

   ii.   Biomarkers

   iii.   Persistence

   iv.   Contaminants

   v.   Harm

2. State **FIVE** sources of pollution in aquatic ecosystems   **(5 marks)**

3. List **FIVE** issues of concern to an ecotoxicologist on the movement and fate of toxic

   chemicals in the environment and organisms.   **(5 marks)**

4. Which are the **FIVE** important workflows in Quantitative Structure-Activity Relationships

   (QSAR)?   **(5 marks)**

5. Name **FIVE** common ecotoxicological and biodegradation tests for chemical and pharmaceutical industries   **(5 marks)**

6. i) Define Ecological Risk Assessment   **(2 marks)**

   ii) State **THREE** factors on which ecological risk depends   **(3 marks)**

SECTION B (40 marks)

7. As a government ecotoxicologist, you need to inform policy and decision on the management of pharmaceutical aquatic pollutants.

   a) Outline the sources of pharmaceuticals in the marine ecosystem   **(8 marks)**

   b) Describe the ecotoxicological effects of pharmaceuticals in aquatic organisms

                                                                       (12 marks)

8. Discuss the importance and application of the Quantitative Structure-Activity Relationships (QSAR) in toxicity testing   **(20 marks)**

9. Discuss the different management strategies for contaminants in the aquatic ecosystems
                                                                       (20 marks)