KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS
2017/2018 ACADEMIC YEAR
THIRD YEAR FIRST SEMESTER
SUPPLIMENTARY / SPECIAL EXAMINATION

FOR THE DEGREE OF B.S.C

COURSE CODE: SCH 350

COURSE TITLE: ENVIRONMENTAL CHEMISTRY

DATE: 10/10/2018 **TIME:** 11:30 – 1:30PM

INSTRUCTION TO CANDIDATES

Answer all questions

Observe zero tolerance to examination cheating

Question one

a. State the most important properties of pollutants that help in predicting the environmental behaviour of the pollutant (3mks)

b. What are the important properties/ parameters of water that influences pollutants behaviour among different locations (5mks)

c. State the important properties of soil that influence pollutants behaviour among different locations (4mks)

d. Explain the following commonly used terms in environmental chemistry (10mks)

i. Receptor

ii. Sink

iii. Dissolved oxygen (DO)

iv. Chemical oxygen demand (COD)

v. Biological oxygen demand (BOD)

Question two

a. The environment consists of various segments

i. Name the four segments of the environment (2mks)

ii. Explain the vital role played by the atmosphere in the survival of life in this planet (6mks)

c. Complete the following table that shows the major regions of atmosphere and their characteristics.

Fill in the blank space A, B, C, D and E (5mks)

Region	Altitude range km	Temperature range °C	Significant chemical species
Troposphere	**A**	15 to -56	N_2, O_2, CO_2, H_2O
B	11-50	-56 to -2	**C**
D	50-85	-2 to-92	O_2^+, NO^+
Thermosphere	**E**	-92 to 1200	O_2^+, O^+, NO^+

Question three

a. As an environmental chemist. Give three reasons Why you think (1, 1, 1-trichloro-2, 2-di (4-phenyl ethane) DDT was banned for use. (6mks)

b. State and briefly describe any three important environmental chemical reactions that can remove pollutants from aqueous environment (6mks)

Question four

a. Discuss the role of ozone in the atmosphere 4mks

b. 90% of ozone layer in the atmosphere can be found in the stratosphere. Discuss the formation of Actical and Antactical holes in the North Pole and South Pole in the stratosphere (6mks)

c. what is the benefits of climate change (2mks)

d. Define the green house effect (3mks)

e. Answer the following questions

i. What is ozone hole (3mks)

ii. What causes ozone hole (3mks)

iii. What does ozone hole have to do with climate change (2mks)