



(Knowledge for Development)

KIBABII UNIVERSITY
UNIVERSITY EXAMINATIONS
2017/2018 ACADEMIC YEAR

FOURTH YEAR 1ST SEMESTER
SPECIAL/SUPPLEMENTARY EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE BIOLOGY

COURSE CODE: SBT 412

COURSE TITLE: MICROBIAL ECOLOGY

DATE: 1st October, 2018

TIME: 3:00 -5:00 p.m.

INSTRUCTIONS TO CANDIDATES

Answer Question one (1) and any other two (2) Questions. Question one is compulsory and carries 30 marks, the other Questions carry 20 marks each.

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over



KIBU observes ZERO tolerance to examination cheating

QUESTION ONE

- a) Distinguish between nitrification and denitrification. (4 Marks)
- b) Highlight any three forms of host-pathogen relationships in ecosystem. (3 Marks)
- c) Explain four abiotic factors influencing the distribution of organisms. (4 Marks)
- d) State five roles of microorganisms in the soil. (5 Marks)
- e) List any two locomotory structures found in microorganisms. (2Marks)
- f) Describe the structural composition of the soil. (4 Marks)
- g) Explain two factors within species which affect population size. (4 Marks)
- h) Explain how to estimate microbial population using quadrat method. (4 Marks)

QUESTION TWO

- a) Explain in detail the events that take place in a phosphorous cycle. (15 Marks)
- b) Describe commensalism as a form of microbial interaction. (5 Marks)

QUESTION THREE

- a) Discuss the main components of an ecosystem. (15 Marks)
- b) State five basic characteristics of an ecosystem. (5 Marks)

QUESTIONS FOUR

Discuss the five methods used to collect organisms in the environment, citing relevant examples in each case. (20 Marks)

QUESTION FIVE

- a) Write short explanatory notes on the following terminologies:-
 - i. Decomposers (4 Marks)
 - ii. Parasitism (4 Marks)
 - iii. Food chains (6 Marks)
- b) Describe one animal disease caused by a bacterium, pointing out the signs and symptoms, prevention and control. (6 Marks)