



(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS 2020/2021 ACADEMIC YEAR

SECOND YEAR SECOND SEMESTER MAIN EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF EDUCATION (SCIENCE)

COURSE CODE: SBL 222

COURSE TITLE: GENERAL MICROBIOLOGY

DATE: FRIDAY 8th, October 2021. TIME: 9:00 -11:00 a.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 3 printed pages. Please Turn Over 

KIBU observes ZERO tolerance to examination cheating

QUESTION ONE

- a) Describe two physical conditions required by bacteria for growth. (4 Marks)
- b) State four characteristics of the division Basidiomycetes. (4 Marks)
- c) Define the following terms:-
- i. Fastidious bacteria (2 Marks)
 - ii. Pure culture (2 Marks)
 - iii. Auxotrophs (2 Marks)
- d) Differentiate between batch culture and continuous culture. (4 Marks)
- e) During Log phase growth of bacterial culture, a sample was taken at 10.00 a.m and found to contain 10,000 viable cells per ml. A second sample taken at 8.00 p.m. was found to contain 10,000,000 viable cells per ml. What is the generation time in hours? (4 Marks)
- a) Describe the role of microbes in mycorrhizae. (4 Marks)
- b) Describe the structural composition of a fungal cellwall. (4 Marks)

QUESTION TWO

- a) Using an illustration, discuss the four main growth curve phases observed in a batch culture. (10 Marks)
- b) After collection of a microbiological specimen for Gram staining, outline the steps involved in the procedure and the expected results. (10 Marks)

QUESTION THREE

- a) Describe bacteria are classified based on the following:-
- i. Nutrition (10 Marks)
 - ii. Number of flagella on the cell surface (5 Marks)
- b) Distinguish between microfilament and microtubule. (5 Marks)

QUESTION FOUR

- a) Describe the basic structural components of a virus. (8 Marks)
- b) Explain the lifecycle of a virus. (12 Marks)

QUESTION FIVE

- a) Discuss the application of micro-organisms in beer production. (12 Marks)
- b) Describe the sexual methods of reproduction in algae. (8 Marks)