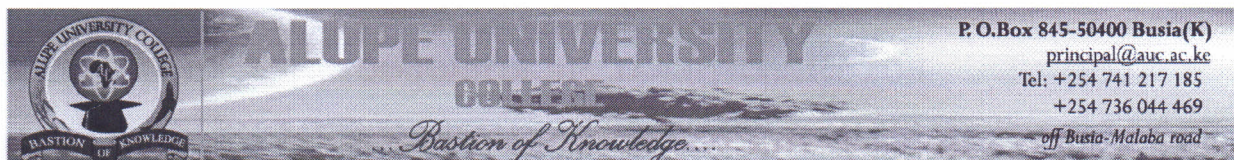


BOT 302E



OFFICE OF THE DEPUTY PRINCIPAL
ACADEMICS, STUDENT AFFAIRS AND RESEARCH

UNIVERSITY EXAMINATIONS

2020 /2021 ACADEMIC YEAR

THIRD YEAR FIRST SEMESTER MAIN EXAMINATION

FOR THE DEGREE OF BACHELOR OF EDUCATION SCIENCE

COURSE CODE: BOT 302E

COURSE TITLE: GENERAL MICROBIOLOGY

DATE: 15TH MARCH 2021

TIME: 9.00 A.M – 12.00 P.M

INSTRUCTIONS TO CANDIDATES

- SEE INSIDE

THIS PAPER CONSISTS OF 3 PRINTED PAGES

PLEASE TURN OVER

BOT 302E

REGULAR – MAIN EXAM

BOT 302E: GENERAL MICROBIOLOGY

STREAM: BED (SCIENCE)

DURATION: 3 Hours

INSTRUCTIONS TO CANDIDATES

- i. Answer **ALL** questions from section A and any **THREE** from section B.
- ii. Diagrams should be used whenever they serve to illustrate the answer.
- iii. Do not write on the question paper.

SECTION A (24 MARKS)

Question One

- a) What are the advantages of cultural cell count over total cell count in the measurement of bacteria growth? (3 Marks)
- b) Giving two examples, explain the meaning of an opportunistic pathogen. (3 Marks)
- c) Distinguish between bactericidal agent and bacteriostatic agent. (2 Marks)
- a) Explain the role of the skin in the human immunity. (4 Marks)

Question Two

- a) Using specific examples, distinguish between selective media and differential media. (3 Marks)
- b) Outline four general characteristics of viruses. (4 Marks)
- c) Highlight Koch's postulates (4 Marks)
- d) Define the following terms:-
 - i. Viroids (0.5 Mark)
 - ii. Prions (0.5 Mark)

SECTION B (36 MARKS)

Question Three

- a) Discuss the seven principles involved in the hazard analysis critical control point (HACCP) for food safety. (10 Marks)
- b) Describe the optical method of measuring bacterial growth. (2 Marks)

Question Four

- a). List three mechanisms by which microbes acquire drug resistance. (2 Marks)
- b) Discuss the sterilization techniques employed prior to the disposal of microbial culture. (10 Marks)

Question Five

- a). How do cells in the stationary phase differ from those in the exponential phase in a bacterial growth curve? (2 Marks)
- b). Describe two methods of viral replication. (10 Marks)

Question Six

- a) Describe the techniques by which microbial population numbers may be determined. (10 Marks)
- b). Distinguish between facultative anaerobic and aerotolerant anaerobic microorganisms. (2 Marks)

Question Seven

Describe the different cells responsible for the body immune system. (12 Marks)
