BINDURA UNIVERSITY OF SCIENCE EDUCATION
BIOLOGICAL SCIENCES DEPARTMENT
BScBZH/HBScBioTec/HBScEDBz

GENERAL MICROBIOLOGY/MICROBIOLOGY (BZH 105/BZH 112/BTEC 131)

EXAMINATION

NOV 2024

2 HOURS (100 marks)

INSTRUCTIONS
Answer FOUR questions. You must answer question 1(Section A) and any other THREE questions from Section B. Each question carries 25 marks. Where a question contains subdivisions, the mark value of each subdivision is given in brackets. Illustrate your answer where appropriate with large clearly diagrams. You should not spend more than 30minutes on each question.

SECTION A (COMPULSORY)

1. (a) Using suitable examples, distinguish among selective, differential, and defined media used in the culturing of bacteria. (15 marks)
   (b) Five (5) ml of a bacterial culture sample were added to 45 ml of sterile diluent. From this suspension two serial dilutions,1/100 were made and 0.1 ml plated onto plate count agar from the last dilution. After incubation ,137 colonies were counted on the plate.

(a) Determine the number of bacterial cells in the original sample. (Show your working). (5 marks)

(b) Describe a procedure to identify the bacterial species in the culture sample. (5 marks)

SECTION B

2. Write short notes on any FIVE of the following:
   (a) Extremophile (5 marks)
   (b) Peptidoglycan (5 marks)
   (c) Mycotoxin (5 marks)
   (d) Saprophytes (5 marks)
   (e) Virion (5 marks)
   (f) Acid fast stain (5 marks)
3. (a) Outline the general properties of viruses. (10 marks)
   (b) Describe the lytic and lysogenic replication cycles in bacteriophages. (15marks)
4. Compare the events of each phase of a bacterial growth curve.
5. Using suitable examples describe the role of microorganisms in the carbon and nitrogen cycles.
6. Describe the importance of fungi in the food and pharmaceutical industries.

END OF EXAMINATION QUESTION PAPER