

BOWEN UNIVERSITY IWO
COLLEGE OF AGRICULTURE, ENGINEERING AND SCIENCE
MICROBIOLOGY PROGRAMME
2021/2022 FIRST SEMESTER EXAMINATION

MCB 413: PHARMACEUTICAL MICROBIOLOGY -THEORY

Answer any 3 questions.

Time: 2h 15min

1. (a) Give a detailed description of the bacterial growth curve
(b) Differentiate between the following:
 - i. Growth in a continuous culture and a batch culture
 - ii. Bacteriostatic and Bactericidal agents

(25marks)

2. Write extensively on five (5) classes of antibiotics giving two (2) examples each of common drugs in the different classes

(25marks)

3. Discuss in detail the sources of microbial contamination of pharmaceutical products and the possible preventive measures

(25marks)

4. (a) Give reasons why antibiotic cell wall penetration in *Enterococcus faecalis* and *Escherichia coli* would differ.

(10 marks)

(b) Draw and label the structure of a bacterium and indicate on the diagram the positions where the following antimicrobial agents would act:
 - (i) Lysozyme
 - (ii) Beta-lactam antibiotics

(10 marks)

(c) Give two examples of spore-forming bacteria and any two antibiotics produced by these bacteria group.

(5 marks)

5. (a) Briefly explain the difference between narrow and broad spectrum antibiotics

(3 marks)

(b) Give two specific examples each of narrow and broad spectrum antibiotics

(4 marks)

(c) Write on the advantages and disadvantages of narrow and broad spectrum antibiotics

(18 marks)