

BOWEN UNIVERSITY, IWO
(Of the Nigerian Baptist Convention)
COLLEGE OF HEALTH SCIENCES
MEDICAL LABORATORY SCIENCE PROGRAMME
2021/2022 SECOND SEMESTER EXAMINATION
MLS 303: BASIC MICROBIOLOGY; TIME: 2HR 30MIN
INSTRUCTION: ANSWER ANY FOUR (4) QUESTIONS
START EACH QUESTION ON A NEW PAGE
ALL QUESTIONS CARRY EQUAL MARKS

1. a. Define the term Microbiology (4 marks)
b. List the six (6) taxonomic branches of Microbiology (6 marks)
c. “During the pre-Microbiology era, diseases and disease process were poorly understood”. Explain (5 marks)
d. List the names of three (3) individuals who proved that microorganisms exist describe how one (1) of them proved that microorganisms exist and cause diseases (12 marks)
e. List the three (3) limitations of Koch’s postulates (3 marks)
2. a. Using annotated diagram(s), describe the bacterial growth curve and explain the events that take place at different phases of the growth curve. (15 mark)
b. If you are interested in metabolic products of bacterial metabolism, at which phase of the growth curve will you measure metabolites and why? (5 marks)
c. What will you do to a bacterial culture to maintain its growth in the phase you have selected in b. above? (5 marks)
3. a. Define the term microbial metabolism (2 marks)
b. What is the fate of microbes, if they fail to metabolise? (5 marks)
c. Describe the three (3) types of microbial metabolism. Give one (1) example in each case (12 marks)
c. What differentiates Chemotrophs from Phototrophs? Based on carbon source, classify each of Chemotrophs and Phototrophs into two (2) different classes (8 marks)
4. a. Define the term sterilisation. Explain the working principle of the autoclave. List three (3) ways of determining the end point of sterilisation in an autoclave (12 marks)
b. Tyndallisation is a process used for sterilisation. Explain how this process can be used to sterilise cereal that was suspected of *Bacillus cereus* contamination. (10 marks)
c. What advantage does this process have over simple boiling? (3 marks)
5. a. Explain the term pathogens (5 marks)
b. Differentiate between pathogens and commensals? (5 marks)
c. List the three (3) major types of infection (3 marks)
d. Describe the three (3) major ways by which pathogens cause illness (12 marks)