(*Knowledge for Development*)
KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR

FIRST YEAR SECOND SEMESTER

SUPPLEMENTARY EXAMINATION

FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOLOGY

COURSE CODE: SBT 212 / SZL 123

COURSE TITLE: PRINCIPLES OF BACTERIOLOGY

DATE: 22ND JULY 2022 **TIME: 2.00 - 4.00 PM**

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 2 printed pages. Please Turn Over

QUESTION ONE

a) Distinguish between Gram positive and Gram negative bacterial cell walls. (4 Marks)

b) Outline any four changes in cells during the stationary phase. (4 Marks)

c) During Log phase growth of bacterial culture, a sample was taken at 8.00 a.m and found to contain 1,000 viable cells per ml. A second sample taken at 6.oo p.m. was found to contain 1,000,000 viable cells per ml. What is the generation time in hours? (4 Marks)

d) Explain the principle of Ziehl Neelsen method of staining. (4 Marks)

e) Describe the different bacterial types based on their temperature requirements. (3 Marks)

f) Differentiate between batch culture and continuous culture. (4 Marks)

g) Enumerate four physical conditions required by bacteria for growth. (2 Marks)

h) What do you understand by the following terms:-

i. Sterilization (0.5 Mark)

ii. Bacteriostatic (0.5 Mark)

i) Describe the steps involved in streak plate method of inoculation. (4 Marks)

QUESTION TWO

a) After collection of a specimen for Gram staining, clearly outline the steps involved in the procedure and the expected results. (10 Marks)

b) Classify bacteria based on their oxygen requirement. (10 Marks)

QUESTION THREE

a) Using an illustration, discuss the four main phases recognized the growth curve observed in a batch culture. (10 Marks)

b) Describe inoculation techniques applied on a solid medium. (10 Marks)

QUESTION FOUR

a) Discuss the methods of sterilization in a bacteriological laboratory. (15 Marks)

b) State five reasons of growing micro-organisms outside the host. (5 Marks)

QUESTION FIVE

a) Discuss the different modes of classification in bacteriology. (20 Marks)