(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS 2016/2017 ACADEMIC YEAR

SECOND YEAR FIRST SEMESTER MAIN EXAMINATION

FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOLOGY

COURSE CODE: SBT 213
COURSE TITLE: BOTANICAL TECHNIQUES

DATE: *16th January 2018* **TIME:** *2:00 – 4:00 p.m.*

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 ▶

Q1 (i)   Define the following
          a) Type specimens
          b) Vital stains
          c) Mordant
          d) Normal solutions
          e) Numerical aperture   (5 marks)

(ii)   Write brief notes on
          a) Kohler illumination
          b) Beer-lambert law

                                                  (5 marks)

(iii)   Distinguish between
          a. Pure and mixed culture
          b. Agar slant and Agar plate
          c. Reflected and Incident rays
          d. Scanning Electron Microscope (SEM) and a Confocal Scanning laser Microscope (CSLM)
          e. Mordant and stains   (5 marks)

(iv)   Briefly explain the following techniques used in microbiology
          a) Disinfection
          b) Quadrant technique
          c) Streak plate
          d) Filtration
          e) Pour plate   (5 marks)

(v)   Explain the International code of botanical nomenclature (ICBN)   (5 marks)

(vi)   Explain how to prepare 2M Solution of HCL. Given that the density of HCL is 1.16g/ml, Purity= 40% and the molecular weight 36.48g/mol.   (5 marks)

Q2 Discuss the importance of Herbarium   (20 marks)

Q3 As a Laboratory manager you have received an autopsy specimen from a patient suspected to be suffering from cancer. Process the specimen to approve/ disapprove this suspicion   (20 marks)

Q4 Describe the process of isolating pure colonies of *Lactobacillus* from milk
                                       (20 marks)

Q5 As a Botanist, you have been charged with the responsibility of collecting plant specimens in the field for taxonomic work.
    a. Explain how you will prepare for collection work   (5 marks)
    b. Describe how you will process the specimens until they are incorporated in the the Herbarium (15 marks)