



(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018 ACADEMIC YEAR

FOURTH YEAR 1ST SEMESTER SPECIAL/SUPPLEMENTARY EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE BIOTECHNOLOGY

COURSE CODE: SBL 413

**COURSE TITLE: PLANT CELL, TISSUE AND ORGANIC
CULTURE**

DATE: 10
4TH October, 2018

TIME: 11:30 -1:30 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



KIBU observes ZERO tolerance to examination cheating

Question 1

- a. Outline the types of gene banks (5 Marks)
- b. Enumerate the different types of tissue culture (5 Marks)
- c. Briefly explain the techniques that have been adopted in order to maintain number of protoplast population between minimum and maximum effective densities after plating up (5 Marks)
- d. List the constituents of culture media (5 Marks)
- e. Briefly discuss the techniques used to regenerate plants through tissue culture (5 Marks)
- f. What are the basic requirements of a laboratory in which tissue culture techniques are performed? (5 Marks)

Question 2

Discuss the achievements, advantages and limitations of somaclonal variation (20 Marks)

Question 3

Discuss the requirements and applications of plant tissue culture. (20 Marks)

Question 4

Discuss manipulation of cell culture as applied in plant tissue culture. (20 Marks)

Question 5

- (a) Explain how you can prepare a culture medium for 40-60 samples. (10marks)
- (b) State the functions of the above culture medium. (10 Marks)