

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE
OF MASTER OF SCIENCE IN BIOTECHNOLOGY**

MICB 864: PLANT CELL AND TISSUE CULTURE

STREAMS: M.Sc

TIME: 3 HOURS

DAY/DATE: WEDNESDAY 14/07/2021

2.30 P.M. – 5.30 P.M.

INSTRUCTIONS:

Answer any THREE questions

Do not write anything on the question paper

QUESTION ONE (20 MARKS)

- (a) Describe how somatic hybridization is used to develop a variety from two different species. (12 marks)
- (b) Describe how to identify somatic hybrid cells. (4 marks)
- (c) Describe how to select regenerated somatic hybrid cells. (4 marks)

QUESTION TWO (20 MARKS)

- (a) Discuss the factors that affect the tissue culture efficiency. (8 marks)
- (b) Discuss four types of vegetative regeneration in plant tissue and organ culture. (12 marks)

QUESTION THREE (20 MARKS)

Describe how you will generate a plantlet from a given plant species using calli method.

(20 marks)

QUESTION FOUR (20 MARKS)

Discuss the applications of Tissue culture.

(18 marks)

Explain the totipotency as used in tissue culture.

(2 marks)