

CHUKA



UNIVERSITY

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**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF
SCIENCE IN BIOMEDICAL TECHNOLOGY**

BMET 443: ANIMAL CELL CULTURE AND BIOTECHNOLOGY

STREAMS:

TIME: 2 HOURS

DAY/DATE: MONDAY 27/09/2021

8.30 A.M. – 10.30 A.M.

INSTRUCTIONS

- **Answer question one and any other two questions**

Question one (compulsory) (30 marks)

- a) Describe the procedure for distinguishing between viable and non-viable cells using Trypan blue staining method in an animal cell laboratory. (6 marks)
- b) Explain 5 special conditions required for optimum cell line growth. (5 marks)
- c) Highlight 4 applications of animal cell culture. (4 marks)
- d) Outline 4 factors that are considered during the selection of a cell line. (4 marks)
- e) Explain the importance of serum supplementation of cell culture media. (8 marks)
- f) Outline 3 properties of continuous cell line. (3 marks)

Question 2 (20 marks)

- a) Explain LEAP (Laser-Enabled Analysis and Processing) Technique for cell line generation. (10 marks)
- b) Describe the process of thawing the cells in an animal cell culture laboratory. (10 marks)

Question 3 (20 marks)

- a) Discuss in detail the features of primary cell cultures. (10 marks)

- b) With the aid of a diagram, describe the phases of a cell growth. (10 marks)

Question 4 (20 marks)

- a) Describe the procedure for cell counting in animal cell culture laboratory using a hemocytometer. (10 marks)
- b) Discuss various ways through which contamination can be prevented in animal cell culture laboratory. (10 marks)
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