



UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHEOR OF SCIENCE IN
BIOMEDICAL SCIENCE AND TECHNOLOGY**

BMET 443: ANIMAL CELL CULTURE AND BIOTECHNOLOGY

STREAMS:

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 18/12/2024

11.30 A.M – 1.30 P.M

INSTRUCTIONS:

Answer Question ONE and any other TWO questions

QUESTION ONE (30 MARKS)

- a) Describe factors influencing cell viability in animal cell cultures. **(5 marks).**
- b) Differentiate between adherent cultures and suspension cultures. **(5 marks).**
- c) Outline the role of balanced salt solutions in cell culture media. **(5 marks).**
- d) Describe the main physical environment for culturing animal cells. **(5 marks).**
- e) Explain the criteria for selecting appropriate cell lines for cell culture experiments. **(5 marks).**
- f) Identify some of the most important products of animal cell cultures . **(5 marks).**

QUESTION TWO (20 MARKS)

- a) Describe the main equipment essential for an animal cell culture laboratory **(10 marks).**
- b) Discuss the applications of animal cell cultures. **(10 marks).**

QUESTION THREE (20 MARKS)

- a) Using a suitable diagram, illustrate the process of hybridoma technology for the production of monoclonal antibodies. **(10 marks).**

- b) Define 'stem cells' and explain their therapeutic uses. **(10 marks).**

QUESTION FOUR (20 MARKS)

- a) Discuss the role of transgenic animals in biomedical research. **(10 marks).**

 - b) Describe methods of introducing exogenous DNA into mammalian cells. **(10 marks)**
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