



FACULTY OF APPLIED AND HEALTH SCIENCES
DEPARTMENT OF PURE & APPLIED SCIENCES
UNIVERSITY EXAMINATION FOR:
BTMB
ABT 4408: CELL TECHNOLOGY PAPER 2
SPECIAL/SUPPLEMENTARY EXAMINATION
SERIES: SEPTEMBER 2018
TIME: 2 HOURS
DATE: Pick Date Sep 2018

Instructions to Candidates

You should have the following for this examination

Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other **TWO** questions.

Do not write on the question paper.

Question ONE

- a. Define the following terminologies as used in animal cell culture:
- i. Continuous cell line (1 mark)
 - ii. Primary culture (1 mark)
 - iii. Senescence (1 mark)
- b. Give the full meaning of the following acronyms as used in cell technology.
- i) RPMI (1 mark)
 - ii) IMDM (1 mark)
 - iii) PEG (1 mark)
 - iv) HGPRT (1 mark)
- c. List **FIVE** variants in antibody heterogeneity. (5 marks)
- d. State the practices that should be observed in BSL-3 laboratory. (7 marks)
- e. Outline the functions of the following drugs as used against autoimmune diseases.
- i. Basiliximab and daclizumab (1 mark)
 - ii. Omalizumab (1 mark)
 - iii. Infliximab and adalimumab (1 mark)

f. Distinguish between DNA and recombinant protein vaccines. (4 marks)

g. Describe two freezing media for cryopreservation of cells (4 marks)

Question TWO (20 marks)

Discuss the factors to consider when selecting an appropriate cell line for cell culture experiments. (20 marks)

Question THREE (20 marks)

Describe the methods used to purify monoclonal antibodies. 20 marks

Question FOUR (20 marks)

a. Discuss hypoxanthine-aminopterin-thymidine (HAT) selection for a hybrid cell. (15 marks)

b. Describe the steps used in production of recombinant vaccines. (5 marks)

Question FIVE (20 marks)

Describe the protocol used for passaging adherent cell line. (20 marks)