



ELIZADE UNIVERSITY,
ILARA-MOKIN, NIGERIA

FACULTY: BASIC & APPLIED SCIENCES

DEPARTMENT: BIOLOGICAL SCIENCES

SECOND SEMESTER EXAMINATION

2018/2019 ACADEMIC SESSION

COURSE CODE: BTH 412

COURSE TITLE: ANIMAL CELL CULTURE

DURATION: 2 HOURS

HOD's SIGNATURE

NAME:.....

MAT. No:.....

INSTRUCTIONS:

Answer any four (4) questions in all

Note: All questions carry EQUAL marks!

Questions

1. (a) Describe the three (3) types of cell lines.
(b) What are the procedures for culturing cells in the laboratory?
(c) Describe some precautions to avoid accidents in the cell culture laboratory.
- 2 (a) (i) What is your understanding of a “clean room”?
(ii) Highlight and explain the use of major facilities and equipment that are crucial in a “clean room”
(b) Explain vitrification and its benefits over slow freezing method
(c) Why is cell line preservation important in animal cell culture?
- 3 (a) Give the two major types of cell culture contaminations with examples.
(b) What are the effects of contamination on cell culture?
(c) State some practices necessary to minimize or control microbial contamination in the cell culture laboratory.
- 4 (a) List two (2) types of buffering systems in regulating pH for optimum culture growth.
(b) What are the four (4) types of synthetic media?
(c) List at least five (5) limitations in animal cell culture.
5. (a) State the phases involved during cell culture growth.
(b) List four antibiotics used in animal cell culture.
(c) A bioreactor containing 20 liters of medium was inoculated with 1.5 L inoculums (3×10^6 cells/ml). A lag phase was observed for the first 26 hours after which cells grew exponentially until they reached a maximum density of 2×10^6 cells/ml after 4 days from the initial inoculation.
 - i. Determine the number of generations of cell growth.
 - ii. Determine the doubling time (DT) during cell growth.
 - iii. Determine the specific growth rate.
6. (a)(i). On the basis of mode of operation list and explain the major types of bioreactor.
(ii) What are things a bioreactor must be able to do before it can be considered good enough for animal cell culture?
(b) Highlight the advantages of Tissue culture flasks.