



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF MASTER OF
SCIENCE IN MEDICAL BIOCHEMISTRY

SBC 547: MEDICAL BIOTECHNOLOGY

DATE: Friday, 30th March, 2012

TIME: 2.00 p.m. – 5.00 p.m.

INSTRUCTIONS: Section A: Answer ALL; Each Qst 5 Marks

1. Outline indirect clinical applications of biotechnology in disease management.
2. (a) What is organ culture?

(b) Under plasmid clot method, describe the general steps employed for embryonic organ culturing.
3. State clinical use of monoclonal antibodies in global health management.
4. What are the merits and demerits of traditional and recombinant vaccines?
5. Discuss the five steps involved in the development of new biotechnology medicines.
6. Giving 3 examples, explain how biologics are used to treat human diseases.
7. Explain how microbial contamination is controlled during cell culture?.

8. Define and discuss the applications of a mammalian cell culture in healthcare.

Section B. Answer 3 Question; 10 marks each

1. Discuss the following concepts in mammalian cell cultures:

a) Isolation of cells

b) Maintaining of cells

c) Manipulation of cells

d) Passaging of cells.

2. With an illustration, describe the hybridoma technology in the production of monoclonal antibodies. 10 marks

3. Describe how gene therapy technology is used to treat genetic disorders.

4. Discuss the role of genetic engineering in disease diagnosis and treatment.