



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE IN BIOTECHNOLOGY

SBC 531: IMMUNOTECHNOLOGY

DATE: Wednesday, 28th March, 2012

TIME: 9.00 a.m. – 12.00 p.m.

INSTRUCTIONS:

Section A: Answer ALL questions; 5 marks each

1. Discuss the applications of immunological techniques in healthcare.
2. What is self-tolerance? Explain how break down of self-tolerance mechanisms lead to autoimmunity.
3. Giving examples, discuss the applications of biosensor technology
4. Explain how gene therapy technology is used to manage genetic disorders
5. Discuss the principles of flow cytometry technique.
6. What is phage display technology? Outline steps involved in the technology bio-planning.
7. What is Major Histocompatibility Complex (MHC)? Name two classes of MHC and their T cell targets.
8. Describe how anti-cancer monoclonal antibodies can be targeted against malignant cells.

Section B: Answer 3 questions; 20 marks each

1. Describe how transplant rejection is managed.
2. With a diagram, describe the production of monoclonal antibodies using hybridoma technique.
3. Discuss the clinical applications of phage display technology.
4. Discuss the applications of monoclonal antibodies for drug delivery. Give 3 therapeutic benefits of this new system.