



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF MASTER OF
SCIENCE (BIOCHEMISTRY)

SBC 501: PROTEIN AND ENZYME TECHNOLOGY

DATE: Wednesday, 28th March, 2012

TIME: 9.00 a.m. – 12.00 p.m.

INSTRUCTIONS:

Section A: Answer ALL the Questions (5 marks each)

1. State the advantages and disadvantages associated with the use of *E. coli* and yeasts as sources of industrial proteins.
2. Name five recombinant pharmaceutical proteins, their sources and uses.
3. Explain the mechanism of meat tenderizing by a plant protein.
4. State the advantages and disadvantages of producing heterologous proteins in milk of transgenic animal other than from animal cell culture.
5. The availability of sufficient supplies of source material is a non-technical consideration which influences the success of a protein production venture. Explain the statement.
6. State the advantages and disadvantages of concentration by the precipitation technique.
7. Describe the preparation of five gel media used in gel filtration chromatography.
8. Describe the principle of affinity chromatography and give five gel media used in this technique.

Section B: Answer any THREE Questions (20 marks each)

9. Give a generalized outline of bulk protein productions from microbial sources.
10. (a) A number of guidelines are followed when designing a downstream protein purification scheme. List them. (14 marks)
- (c) Identify three main classes of factors that may adversely affect the biological activity of proteins; give three examples of each. (6 marks)
11. Describe the procedure used in the production of polyclonal antibodies.
12. Explain the procedure of producing monoclonal antibodies.