UNIVERSITY OF JAFFNA
BACHELOR OF PHARMACY
FOUIRTH YEAR FIRST SEMESTEREXAMINATION – JULY 2013
PHABT4103 - PHARMACEUTICALBIOTECHNOLOGY
Paper II

Date: 14.08.2013 **Time: 02 Hours**

ANSWER ALL THE **EIGHT** QUESTIONS

1. 1.1 Define the terms "batch culture and continuous culture". (10 Marks)
   1.2 Describe the advantages and disadvantages of batch culture and continuous culture. (50 Marks)
   1.3 1.3.1 Draw a graph of biomass concentration against time for the batch culture. (20 Marks)
   1.3.2 Mark four phases in that graph. (20 Marks)

2. Describe the procedure of production of the following by fermentation technology.
   2.1 Penicillin. (50 Marks)
   2.2 Sterptomycin. (50 Marks)

3. 3.1 Define 'DNA recombinant technology'. (20 Marks)
   3.2 List four advantages of DNA recombinant technology. (20 Marks)
   3.3 Describe the steps involved in DNA recombinant technology. (60 Marks)

4. 4.1 What is a cloning vector? (20 Marks)
   4.2 Draw the structure of a plasmid vector and mark its components. (40 Marks)
   4.3 Describe the role of viral vector in gene therapy. (40 Marks)

5. 5.1 Explain the term attenuation in vaccine production. (20 Marks)
   5.2 Write the advantage of live attenuated vaccine. (20 Marks)
   5.3 Briefly describe how antisera are produced from animals. (60 Marks)

6. 6.1 Name the different types of insulin. (20 Marks)
   6.2 What are insulin analogues?Give examples. (30 Marks)
   6.3 Briefly explain the recombinant insulin production process. (50 Marks)

7. 7.1 Briefly describe the monoclonal antibody production. (50 Marks)
   7.2 Explain the role of memory cell immune responses. (50 Marks)

8. Imagine you are working in a laboratory, where you have been requested to conduct a PCR analysis on query mouse sample. The query mouse sample has an autosomal recessive mutation in the CFTR gene. In addition to the query sample, you have been given a control sample, where both alleles of the CFTR gene are dominant.
   8.1 Design the protocol for the above analysis. (Use a flowchart describe your protocol) (40 Marks)
   8.2 Describe the steps involved in the PCR and follow up gel electrophoresis. (60 Marks)