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UNIVERSITY OF JAFFNA
BACHELOR OF PHARMACY
FOURTH YEAR FIRST SEMESTER EXAMINATION
PHABT4103 PHARMACEUTICAL BIOTECHNOLOGY

Date: 26/11/2014

Time: 2 Hours

PART II

Answer all 8 questions.

1. 1.1 Define "batch culture" and "fed-batch culture". (20 Marks)
- 1.2 Describe both advantages and disadvantages of batch and continuous culture. (40 Marks)
- 1.3 Draw a schematic representation of a fermentation process. (40 Marks)

2. Write short notes on
- 2.1 Penicillin production from *Penicillium* moulds. (50 Marks)
- 2.2 Riboflavin production from *Ashbya gossypii* fungus. (50 Marks)

3. 3.1 List six products that are produced by DNA recombinant technology (30 Marks)
- 3.2 Describe steps involved in the DNA recombinant technology (70 Marks)

4. 4.1 What are the common properties of vectors? (30 Marks)
- 4.2 Describe two methods that can be used for transformation process of vectors. (50 Marks)
- 4.3 What are the common problems associated with cloning in bacteria? (20 Marks)

5. 5.1 Explain the term "attenuation" in vaccine. (20 Marks)
- 5.2 What are the advantages and disadvantages of attenuated vaccine? (40 Marks)
- 5.3 Define "antiserum" and mention its limitations. (40 Marks)

6. 6.1 What are the applications of papain? (30 Marks)
- 6.2 Describe the collection of papaya latex and manufacturing methods of papain. (70 Marks)

7. 7.1 Briefly describe direct fluorescent antibody test. (50 Marks)
- 7.2 Briefly explain hybridoma technique used to produce monoclonal antibodies. (50 Marks)

8. 8.1 Discuss the polymerase chain reaction (PCR). (60 Marks)
- 8.2 What factors influence the DNA separation in gel electrophoresis? (40 Marks)

