Rajiv Gandhi University of Health Sciences

First Year M.Pharm Degree Examination - October 2010

[Time: 3 Hours] [Max. Marks: 100]

PHARMACEUTICAL BIOTECHNOLOGY - I

(Revised Scheme 2)

Q.P. CODE : 9312

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary. Answer all questions

LONG ESSAY (Answer any FOUR) **4 X 25 = 100 Marks**

1. a) Draw neat labeled diagram of a typical bacterial cell and explain the structure and chemical composition of plasma membrane, with relevance to substrate entry, energy yielding mechanism and antimicrobial drug design
   b) With a neat labeled diagram, describe the structure of bacteriophage and outline its cultivation and replication
2. a) Compare fungi with bacteria and discuss the morphological features of molds
   b) Describe the physical and chemical environment for bacterial growth and differentiate batch culture from continuous culture
3. a) Schematically represent the formation of ATP and discuss various mechanisms of phosphorylation to generate ATP
   b) Define Genetic Recombination and vertical gene transfer. Discuss the methods of gene transfer among bacteria
4. a) what are the criteria to design a medium for industrial fermentation and explain the factors influencing the choice of carbon source
   b) Discuss the production of Lactic acid by fermentation process and mention its uses
5. a) Discuss the production and microbiological assay to Vit B_{12}
   b) What are the advantages of microbial transformations over other methods and explain microbial transformations of steroids
6. Write short notes on:
   a) Selective isolation techniques
   b) Synchronous growth and normal growth
   c) Secondary metabolites
   d) Actinophages and their role in fermentations
   e) Pharmaceutical effluents and treatment

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