

R07

Code No: R7702

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD

B. Pharmacy IV Year II Semester Examinations, April/May-2012

PHARMACEUTICAL BIOTECHNOLOGY

Time: 3 hours

Max. Marks: 80

**Answer any five questions
All questions carry equal marks**

- 1.a) Give an account on types, design and operation of bioreactor.
b) i) Write various methods of strain improvement.
ii) Write about principle and procedure involved in downstream processing. [16]
2. Explain the method of fermentation, purification and recovery for the following.
i) Streptomycin
ii) Riboflavin. [16]
- 3.a) Write the types and methods of bioconversions and their application in pharma industry.
b) Write the oxidation and reduction reactions involved in microbial transformation with reference to steroids. [16]
- 4.a) Define rDNA technology and explain the steps involved in cloning of genes.
b) What are monoclonal antibodies? Explain their production by hybridoma technology. [16]
- 5.a) Differentiate humoral and cell mediated immunity and list out the antigen antibody reactions with their applications.
b) Write in detail the preparation, standardization and storage of smallpox vaccine. [16]
- 6.a) Explain the different techniques of enzyme immobilization along with their advantages.
b) Give detail account of the following enzymes
i) Penicillinase
ii) Streptokinase. [16]
7. Define plasma substitutes and sutures and ligatures. Write the process of collection and storage of
i) Whole human blood
ii) Catgut. [16]
8. Define the terms and explain in detail about the applications of
i) Bioinformatics
ii) Genomics. [16]

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