

Code: 13R00802

B.Pharm IV Year II Semester (R13) Advanced Supplementary Examinations July 2018

**PHARMACEUTICAL BIOTECHNOLOGY**

(For 2013, 2014 regular &amp; 2014, 2015 lateral entry admitted batches only)

Time: 3 hours

Max. Marks: 70

**PART – A**  
(Compulsory Question)

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- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) Write about types of bioreactors.
  - (b) Write the principle involved in downstream process.
  - (c) What is rDNA technology?
  - (d) Mention the steps involved in isolation of enzymes.
  - (e) Write the principles of immunity.
  - (f) Differentiate active and passive immunities.
  - (g) Explain the significance of immobilization of enzymes.
  - (h) Write about the organisms used for production of amylase.
  - (i) Explain the role of bioinformatics in preventive medicine.
  - (j) Write the significance of gene therapy in pharmacy.

**PART – B**  
(Answer all five units, 5 X 10 = 50 Marks)**UNIT – I**

- 2 Write in detail about production of riboflavin by fermentation.
- OR**
- 3 Give a detailed account on principles and procedures involved in effluent treatment.

**UNIT – II**

- 4 Explain in detail about production of biotechnologically derived humulin.
- OR**
- 5 Enumerate in detail about stem cells and their applications.

**UNIT – III**

- 6 Give a detailed account on preparation, standardization and storage of BCG vaccine.
- OR**
- 7 Explain in detail about antigen - antibody reactions.

**UNIT – IV**

- 8 Describe various techniques of immobilization of enzymes.
- OR**
- 9 Give a detailed account on study of streptokinase.

**UNIT – V**

- 10 Write about various techniques of proteomics.
- OR**
- 11 Give a detailed account on bioinformatics.

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