

PARUL UNIVERSITY
FACULTY OF PHARMACY
B. Pharm. Summer 2018-19 Examination

Semester: 5**Subject Code: 08101303****Subject Name: Pharmaceutical Biotechnology****Date: 01/05/2019****Time: 10:00am to 1:00pm****Total Marks: 75****Instructions:**

1. Figures to the right indicate full marks.
2. Make suitable assumptions wherever necessary.

Q.1 Essay type Questions. (Any 2 out of 3) (10 marks each) (20)

1. Discuss fermentative production and recovery of streptomycin.
2. Define and classify immunity. Detail out the structure of immunoglobulins.
3. What is gene cloning? Discuss steps involved in gene cloning. Write a note on enzymes used as molecular scissors.

Q.2 Short Essay type Questions. (Any 7 out of 9) (5 marks each) (35)

1. What is enzyme immobilization? Explain techniques used for enzyme immobilization.
2. Write in detail about design of ideal fermenter with a neat labelled diagram.
3. Write a note on viral mediated gene transfer process in bacteria.
4. Write a note on hybridoma cell technology. Give its applications.
5. Explain protoplast fusion.
6. Write a note on viral vaccines.
7. Explain the steps involved in downstream processing.
8. Write a note on microbial transformation of steroids.
9. Write a note on cryopreservation.

Q.3 Answer in short. (2 marks each) (20)

1. Give applications of transgenic plants.
2. Differentiate vaccine & sera.
3. Comment: 1) Second line defence is non-specific defense.
2) TAB is a mixed polyvalent vaccine.
4. What is hypersensitivity reaction? Enlist different types of it.
5. What is humulin?
6. Discuss principle involved in immunoprecipitation reactions. Give its applications.
7. Differentiate conjugation & transformation.
8. What are the standard microorganisms required for the production of the followings by fermentation:
a. Penicillin, b. Vitamin B12, c. Ethanol d. riboflavin.
9. What is plasmid? Give its ideal characteristics.
10. Define: a. Totipotency b. Genetic recombination