

PARUL UNIVERSITY
FACULTY OF PHARMACY
B.Pharm. Summer 2017-18 Examination

Semester: 5**Subject Code: 08101303****Subject Name: Pharmaceutical Biotechnology****Date: 18/05/2018****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. Define: Enzyme immobilization. Describe various techniques of immobilization. Explain factors affecting enzyme kinetics.
2. Write brief outline of recombinant DNA technology with its pharmaceutical applications.
3. Define: Fermentation. Draw neat and clean diagram of fermenter. Describe in brief its parts.

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

1. Explain plant tissue culture applications in pharmacy.
2. Write a note on Haptens.
3. Explain immobilization of bacteria and plant cells.
4. Write a short note on production of Humulin.
5. Describe in detail downstream processing of biotech products.
6. Describe fermentative production of vitamin B-12.
7. Explain in details microbial transformation and its types.
8. Describe types of human immunoglobulins.
9. Write a short note on somatic hybridization.

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

1. What is antigen-antibody reaction?
2. List out technical advantages associated in production of enzymes using microorganism.
3. How recombinant DNA technology is used for improving milk production?
4. Define: Immunity. What are different kinds of lymphocytes in the human body?
5. List out the steps involves in the establishment of hybridomas and production of mAbs.
6. Give types of immunomodulators with two examples of each.
7. Write factors affecting enzyme reaction velocity.
8. List out advantages of genetic engineering produces proteins over proteins isolated from other biological sources.
9. What are transgenic plants as edible immunogenic concept?
10. Which types of transformation reactions are carry out by microbial systems?