Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 10

B.Pharmacy (Sem.–7)

# PHARMACEUTICL BIOTECHNOLOGY

Subject Code : PHM-471

M.Code : 46157

Time : 3 Hrs. Max. Marks : 80

**INSTRUCTIONS TO CANDIDATES :**

1. **SECTION-A is COMPULSORY consisting of FIFTEEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains FOUR questions carrying TEN marks each and students have to attempt any THREE questions.**

## SECTION-A

**Q1. Describe briefly :**

a) Pharmaceutical biotechnology

b) Humoral immunity

c) Antigen and antibody

d) Continuous system

e) Streptokinase

f) Monoclonal antibodies

g) Humatrope

h) In-line and on-line controls in fermenter

i) Fermentation

j) Biotransformation

k) Enzyme immobilization

l) Enzyme kinetics

m) Streptodoranase

n) Downstream processing

o) Protoplast fusion

## SECTION-B

Q2. Describe the applications of biotechnology in pharmaceutical sciences.

Q3. What is genetic recombination? Describe briefly bacterial conjugation with neat and labelled diagrams.

Q4. Describe briefly downstream processing of penicillin and streptomycin.

Q5. Describe biotransformation process and its improvements with special reference to steroids.

Q6. Describe the applications of proteases and amylases in pharmaceutical sciences.

## SECTION-C

Q7. Describe different techniques used for the immobilization of enzymes with advantages and disadvantages in each case.

Q8. Describe the production of monoclonal bodies by hybridoma technology.

Q9. Describe the techniques for the isolation of mutants. Also, highlight the factors influencing the rate of mutation.

Q10. Describe the batch and fed batch culture system for the production of microbial products with suitable examples.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**