M.Sc. Part–II Semester–III (CBCS) Examination
BIOCHEMISTRY
FERMENTATION TECHNOLOGY
Paper–XI

Time : Three Hours] [Maximum Marks : 80

N.B. :— (1) All questions are compulsory and carry equal marks.

(2) Draw diagrams wherever necessary.

1. (a) Explain use of mutant in selection of microbial culture. 8

(b) Describe in detail equipment and instrumentation for static culture. 8

OR

(c) Explain in brief role of recombinant technology in culture selection for microbial fermentation. 8

(d) Describe in detail equipment and instrumentation for agitated culture. 8

2. (a) Describe measurement of volume, mass, weight and gas flow. 8

(b) Describe purification operations of fermentation product. 8

OR

(c) Describe in detail about primary separations of fermentation product. 8

(d) Write a note on removal of solids and product isolation. 8

3. Describe in detail kinetics of antibiotic fermentation. 16

OR

Explain in detail fermentation rates, state of substrate conversion and productivity. 16

4. Explain the following :

(a) Batch and semi batch bioreactors 5

(b) Ideally mixed reactor 6

(c) Calculation of flow rate 5

OR

(d) Overall and differential mass balance. 5

(e) Give calculation for flow rate 6

(f) Explain CSTF and TFR. 5

5. Explain in detail any four bacterial and eukaryotic expression vectors. 16

OR

Explain in detail mammalian cell culture (Hela) in fermentor and add a note on recombinant protein. 16