Exam.Code:0910
Sub. Code: 33378

2055

B.E. (Biotechnology) Sixth Semester

BIO-614: Down Stream Processing

Time allowed: 3 Hours Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.

x-x-x

Q1. Answer the following briefly:

(i) Briefly describe downstream processing and name its 4 stages.

(ii) Draw the drying curve and write its stages.

(iii) Define distribution coefficient in extraction process and give its significance.

(iv) Differentiate between reducing and non-reducing PAGE.

(v) Explain the equation of terminal velocity in centrifugation. (5x2)

UNIT - I

Q2. Elaborate the characteristics of a fermentation broth for recovery of a biomolecule. (10)

Q3(i) Explain the precipitation of proteins using organic solvents.

(ii) How can a bead mill be used for cell lyses?

(iii) Explain the use of rotary drum filter. (3,4,3)

Q4 (i) Describe adsorption for isolation of a bioproduct from fermentation media.

(ii) Draw a labelled diagram of basket centrifuge and give its operation parameters. (5,5)

UNIT - II

Q5. Describe affinity chromatography in detail. (10)

Q6. Give the principle of electrophoresis and explain rocket electrophoresis. (10)

Q7. Write short notes on:

(i) Dialysis
(ii) Crystallization
(iii) Lyophilization
(iv) Concentration polarization (4x2½)

x-x-x