Total No. of Questions : 10] **SEAT No. :**

P3574 **[Total No. of Pages : 2**

[4959] - 1181
B.E. (Chemical) (End Sem.)
ADVANCED SEPARATION PROCESSES
(2012Pattern)

Time : 2 1/2 Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.***
4) ***Assume suitable data, if necessary.***

Q1) Give tray to tray calculations of multicomponent distillation column. **[10]**

OR

Q2) Explain residue curve maps in detail. **[10]**

Q3) Explain reactive extraction process with applications. **[10]**

OR

Q4) Give the solute characteristics of reversible chemical complexation. **[10]**

Q5) a) Explain 'liquid emulsion membrane'. **[8]**

b) Explain mechanism of MF and UF. **[8]**

OR

P.T.O.

Q6) Explain dialysis and electro-dialysis with neat sketches and its applications. **[16]**

Q7) a) Give the characteristics of solid adsorbents and liquid chromatography. **[8]**

b) Describe the types of chromatography. **[8]**

OR

Q8) a) Explain the concept and general principles of adsorption. **[8]**

b) Explain the application of chromatography in separation of enzymes and proteins. **[8]**

Q9) a) Give the industrial applications of molecular series. **[9]**

b) Explain the principle and applications of froth flotation with neat diagram. **[9]**

OR

Q10) a) Explain the collapse and drainage phenomena in detail. **[9]**

b) Explain zone electrophoresis and its industrial applications in detail. **[9]**