B. Tech. Sem - VIII (Chemical Engg.) (2014 COURSE) (CBCS) :
SUMMER - 2019
SUBJECT: ELECTIVE – IV BIO-SEPARATIONS

Day: Thursday
Date: 23/05/2019

Time: 02.30 PM TO 05.30 PM
Max Marks : 60

S-2019-2868

N.B. :

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Assume suitable data, if necessary.

Q.1 Write a short note on:
a) Bio-product purification **(05)**
b) Physico-chemical basis of bio-separation **(05)**

OR

Q.1 a) Explain in detail separation of cells and other insolubles from fermented broth. **(05)**
b) What are different characteristics of biological mixtures? **(05)**

Q.2 Explain in detail related to bio-separation **(10)**
a) Cell disruption
b) Centrifugation
c) Ultra filtration

OR

Q.2 Explain in detail related to bio-separation. **(10)**
a) Liquid-liquid extraction
b) Super critical fluid extraction
c) Adsorption

Q.3 Explain in detail different electrophoresis techniques related to bio-separation. **(10)**

OR

Q.3 Explain in detail different chromatographic techniques related to bio-separation. **(10)**

Q.4 a) Explain in detail precipitation method using ammonium sulfate. **(05)**
b) What is mean by Zone refining? **(05)**

OR

Q.4 a) Explain in detail precipitation method using high molecular weight polymers. **(05)**
b) Explain in detail adductive crystallization. **(05)**

Q.5 Explain any two emerging bio-separation techniques in detail. **(10)**

OR

Q.5 Write short note on
a) SEP box **(05)**
b) Hyphenated techniques **(05)**

Q.6 Explain in detail application of bio-separation in purification of β-amylase. **(10)**

OR

Q.6 Explain in detail application of bio-separation in insulin. **(10)**

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