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SEAT No. :

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T.Y.B.Sc.

BIOTECHNOLOGY

Bb-341: Large Scale Manufacturing Process

(2013 Pattern) (Semester - IV)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Draw neat labelled diagrams wherever necessary.*
- 3) *Figures to the right indicate full marks.*

Q1) Answer the following in 2-3 lines:

[10×2=20]

- a) Define depreciation.
- b) Define precursor. Give suitable example.
- c) State the factors affecting filtration.
- d) What is meant by Inoculum and production medium?
- e) What is mutant with altered permeability. Give suitable example.
- f) Define sparger. State its types.
- g) What is scale up of fermentation process.
- h) Enlist two culture collection centres of industrially important micro-organisms.
- i) State the role of cane and sugar beet molasses in a fermentation medium.
- j) Describe in brief the depth filter.

Q2) Write short notes on (any three):

[3×5=15]

- a) Pressure cycle fermenter.
- b) LAL Test.
- c) Inoculum build up (Bacterial) for industrial fermentation.
- d) Affinity chromatography.

P.T.O.

Q3) Attempt any three of the following:

[3×5=15]

- a) Describe the role of rotary vacuum filter in down stream processing of fermentation product.
- b) Describe the concept of good manufacturing processes in large scale manufacture process.
- c) Explain co-current and counter current liquid-liquid extraction method.
- d) Describe in brief the bubble column fermenter.

Q4) a) What is ion-exchange chromatography? Describe the recovery of streptomycin by ion-exchange chromatography. **[7]**

OR

Describe the use of computers in a bioprocess.

- b) Describe the large scale production of amylase and state the applications of amylase. **[8]**

OR

Describe the monitoring and control of foam in a fermentation process.

Q5) Describe the large scale production of amino-acids with respect to producer organism, production medium, auxotrophic mutants and fermentation process. **[15]**

OR

Describe the construction and working of a typical fermenter with the help of a neat labelled diagram.

