

R-3831-32

M. Sc. Biotechnology (Integrated) (Sem. VII) Examination

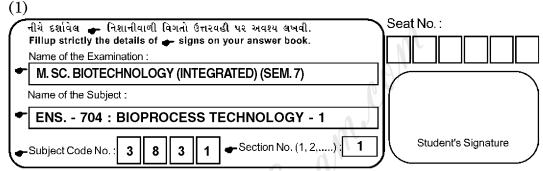
May / June - 2010

Ens. - 704: Bioprocess Technology - I

Time: 3 Hours] [Total Marks: 70

R-3831

-					
In	stru	1 <i>0</i> †1	On	C	•
111	SUL L	1001	\mathbf{v}	. 🗷	•



- (2) Figures to the right indicate full marks of the question.
- (3) Draw neat and labeled diagrams whenever necessary.
- (4) Both sections must be written in separate answer books.
- 1 (a) Give the types of sparger used in fermentation design. 10
 - (b) How will you formulated the production media?
 - (c) What is the effect of scale on Mass transfer?
 - (d) What is PID control? What is its significance?
 - (e) How will you determine volumetric mass transfer coefficient?
- 2 Answer any two of the following:

10

- (a) Describe the design and operational principle for CSTR.
- (b) What mass transfer? Describe the biological heat transfer coefficients.
- (c) Differentiate Adaptive control and predictive control.
- **3** Write short notes on:

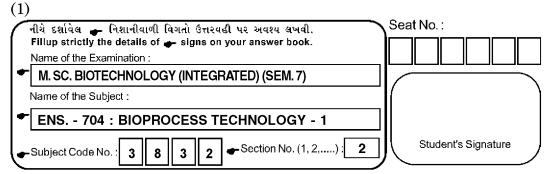
15

- (a) Fluidized Bed reactor
- (b) Sterilization of air
- (c) Aeration and Agitation devices
- (d) Strain improvement by gene manipulation.

R-3831-32] 1 [Contd...

R-3832

Instructions:



- (2) Figures to the right indicate full marks of the question.
- (3) Draw neat and labelled diagrams whenever necessary.
- (4) Both sections must be written in separate answer books.
- 4 (a) What is stages of product formation? Which are the 10 techniques to increase its yield?
 - (b) What are the effects of sterilization cost on the total final cost of product?

OR

- (c) List the concentration methods used to maximize product yield and describe any two in detail.
- (d) List the chromatographic techniques used for purification of products and give its significance.
- 5 Answer anay two of the following:

10

- (a) Enlist the Electrochemical methods used for product recovery. Describe the electrodialysis in detail.
- (b) List the purameters considered while deciding the product cost and give significance of each of them.
- (c) Which are the devices used for aeration, agitation and to prevent vortex formation? What are their significance?
- **6** Write short notes on :

15

- (a) Flocculation Vs Precipitation as recovery processes.
- (b) Cell integration and product recovery.
- (c) Mass transfer of gases.
- (d) Air lift fermenter.
- (e) Electro phoresis as purification process.

R-3831-32] 2 [300]