

**2008****3rd Semester Examination****MICROBIOLOGY****PAPER—XVI****Full Marks : 40****Time : 2 Hours**

*The figures in the right-hand margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

**Answer any two questions from each group.**

**Group — A****[Marks : 20]**

1. Write short notes on (any four) :  $2\frac{1}{2} \times 4$
- (a) Tickle bed fermentor.
  - (b) Fed batch fermentation.
  - (c) Down stream processing.
  - (d) Heat transfer mechanism.
  - (e) Sterilization of a fermentor.
2. What different rheological properties are generally considered during a fermentation process ?  
How those factors influence in fermentation ? Describe different types of fluid flow.

(Turn Over)

How bubble size influences agitation and dissolve oxygen concentration of a fermentation vessel. 2+3+3+2

3. Describe different parts of a stirred tank reactor with diagram. Classify solid state fermentation. Describe any one type of solid state fermentation process.

4+2+2+2

**Group — B**

[Marks : 20]

1. Write notes on : 2.5×4
- (a) Production of tetracycline.
  - (b) Preservation of microbial strain.
  - (c) Patent formulation.
  - (d) Production of wine.
2. (a) State the important characteristics of industrial strain. How will you improved the strain?
- (b) Write down the industrial applications of lipase & protease. (3+2)+5
3. (a) What is immobilization? State the different methods of immobilization. Mention the advantages of whole cell immobilization.
- (b) What is malolactic fermentation? Why it is performed? State the role of nobelrot fungus in wine making. (1+3+2)+(2+1+1)
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