5556056 Seat No. _____

M. Sc. (Part - II) Examination

April / May – 2003

Microbiology : Paper - IV

(Advances in Microbial Technology)

Time : 3 Hours] [Total Marks : 100

Instruction : All questions carry **equal** marks.

1 Answer any **two** :

   (a) Explain rapid method used for scale-up of sterilization.

   (b) Describe the importance of shake flask and pilot fermentor in scale-up process.

   (c) Discuss the role of precurssor and inhibitor addition in the modification of antibiotics.

   (d) What are bioreactors ? Describe principles of their basic design.

2 Write any **two** :

   (a) Describe production of monoclonal antibodies.

   (b) What is a biosensor ? Discuss its applications.

   (c) What is a carrier ? Discuss its role and pre-conditioning in an immobilized system.

   (d) Describe importance of inoculum amount and inoculum type in bioassay.

3 Answer any **two** :

   (a) Describe continnous sterilization process and give its importance.

   (b) Enlist and explain aims and objectives of aeration and agitation.

   (c) What are non-Newtonian fluids ? Describe their role in aeration-agitation.

   (d) Describe solvent extraction methods for the recovery of fermentation products.

4   Write any **two** :

(a)   What are biofertilizers ? Discuss the role of different biofertilizers in snstainable agriculture citing suitable examples.

(b)   Describe mushroom cultivation. Enlist methods used for its improvement.

(c)   What are bioinsecticides ? Give a comprehensive account of the bioinsecticides used in agriculture.

(d)   Discuss the screening of microbes for SCO production. Enlist the efficient producers and advantages of using single cell oil.

5   Answer any **two** :

(a)   Explain need for susceptibility tests and describe recent developments for the same.

(b)   Describe role of biofilm reactors in screening of novel antimicrobial compounds.

(c)   Explain importance of quality control and quality assurance in industry.

(d)   What is a patent ? Discuss in brief the procedure required to have patent of processes and products.