2009

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. (i) What are the advantages of CSTR over batch reactor?

(ii) Write short note on dynamic method for KLa measurement.

(iii) Classify fluids on the basis of their Rheological Property.

(iv) Define chemostatic & turbidostatic fermentation system. 3+3+3+1

2. (i) Prove that for continuous fermentation process $\mu = D$ under steady state.

(ii) Define μ & D and write their units. What is yield coefficient?

(iii) How can you determine microbial death rate, experimentally?

(iv) How can you calculate the sterilization time of a batch sterilizer? $3+3+2\frac{1}{2}+1\frac{1}{2}$

3. (i) What are the advantages and disadvantages of solid state fermention?

(ii) Give a comparative account on solid state and submerged fermentation.

(iii) Briefly discuss on Bubble column Bio reactor.

(iv) Define down stream processing. 3+3+2+2

Group—B

[Marks : 20]

4. Write notes on (any *four*) : 2·5×4

(a) Production of Citric acid;

(b) IPR;

(c) Industrial strain;

(d) Steroids.

5. (a) What is malting? Briefly describe the production of lager beer.

(b) Give a flow chart of acetic acid production. (1+5)+4

6. (a) How is enzyme immobilised? Mention its importance over whole cell immobilization.

(b) Briefly describe the production of alcohol with flow chart. 5+1+4

———