2010

M.Sc.

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. (a) Briefly discuss a method of large scale media sterilization.

(b) Classify fluids on the basis of viscosity.

(c) What is Reynold's number ? How is it expressed and in what unit ? You want to mix different compounds of fermentation medium — what should be the value of NRe ? 4+3+3

2. (a) What do you know about volumetric oxygen transfer rate ? Briefly discuss one KLa measurement method.

(b) In case of CSTR, under Steady State Condition — Prove that $\mu = D$.

(c) Purification of intracellular enzyme is problematic than secretory enzyme — why ?

(d) Briefly discuss different cell disruption methods.

4+3+1+2

3. (a) Maximum theoretical ethanol from glucose is 51% — Justify.

(b) What are the basic criteria and basis of scale-up methods?

(c) For convection process, what is the heat transfer rate equation.

(d) Write the different chromatographic methods.

$2\frac{1}{2}+3+1\frac{1}{2}+3$

Group — B

[Marks : 20]

4. Write notes on (answer any *four*) : $2\frac{1}{2}\times4$

(a) Industrial strain-improvement & preservation ;

(b) Streptomycin production ;

(c) Malolactic fermentation ;

(d) Lipase production ;

(e) Use of alcohol.

5. (a) Briefly describe the methods of immobilization.

(b) Point out the differences between primary metabolite with that of secondary metabole.

(c) State the application of protease. 5+3+2

6. (a) Give an idea about the preparation of the following :

(i) Sparkling wine ;

(ii) Sweet desert type wine.

(b) What is hop? Why it is added in the preparation of beer?

(c) Briefly describe how IPR is protected. (2+2)+2+4
