



Second Semester B. Sc. Examination

MICROBIOLOGY

Paper - I

(Microbial Physiology)

Time : Three Hours]

[Max. Marks : 50

N. B. : (1) All questions are compulsory and carry equal marks.
(2) Draw diagrams and give examples wherever necessary.

1. Describe the various phases of typical bacterial growth curve.

OR

Define continuous culture. Describe chemostat and turbidostat. 10

2. Describe the mechanism of cell injury.

OR

Discuss the factors influencing antimicrobial activity.

10

3. (a) Classify the organisms on the basis of energy, carbon and electron sources. 5
(b) Describe the basic nutritional requirements of bacteria. 5

OR

(c) Define non-synthetic media. Give composition of nutrient agar and Describe significance of each ingredients. 5

(d) Describe any two special purpose media commonly used in microbiology laboratory. 5

4. (a) Describe the characteristics of an ideal disinfectant. 2 $\frac{1}{2}$

(b) Describe tyndallization. 2 $\frac{1}{2}$

(c) Compare the mode of action of moist heat and dry heat. 2 $\frac{1}{2}$

(d) Give mechanism of killing by uv radiations. 2 $\frac{1}{2}$

OR

(e) Describe Pasteurization. 2 $\frac{1}{2}$

(f) How microorganisms are controlled by osmotic pressure ? 2 $\frac{1}{2}$

(g) What precautions should be taken while operating autoclave ? 2 $\frac{1}{2}$

(h) Explain photoreactivation. 2 $\frac{1}{2}$

5. Solve any **ten** questions :—

(i) What is an axenic culture ? 1

(ii) What is β -hemolysis ? 1

(iii) Define prototroph. 1

(iv) What are thermoduric organisms ? 1

(v) What are microacrophilic organisms ? 1

(vi) Give any two modes of bacterial reproduction. 1

(vii) What is incineration ? 1

(viii) What are HEPA filters ? 1

(ix) Define disinfection and sterilization. 1

(x) What is fumigation ? 1

(xi) Give the formula to determine phenol coefficient. 1

(xii) Name any two gaseous chemosterilizer. 1