

(i) Printed Pages : 3

Roll No.

(ii) Questions : 9 Sub. Code :

1	3	8	2	2
---	---	---	---	---

Exam. Code :

5	0	5	2
---	---	---	---

**B.Sc. (Hons.) (Bio-Technology) FYUP 2nd Semester
(2055)**

BASIC MICROBIOLOGY

Paper-BIOT202

Time Allowed : Three Hours] [Maximum Marks : 68

Note :— Attempt **FIVE** questions in all, including Question No. **IX** (**Unit-V**), which is compulsory, and selecting **ONE** question from each unit.

UNIT—I

I. (a) Mention the contribution of any **two** :

- (i) L. Pasteur
- (ii) Robert Koch
- (iii) J. Lister
- (iv) J. Tydnall.

(b) What is the resolving/resolution of Microscope ? Discuss the different factors on which it depends. 8,6

II. (a) Write the principle of the Electron Microscope. How is it different from the compound microscope ?

(b) How does the phase contrast microscope work ? Give a diagram of it. 7,7

UNIT—II

- III. (a) Write the characteristic features of Eubacteria.
(b) Discuss different methods of Microbial classification. 6,8
- IV. (a) What is the difference between Gram positive and negative bacteria ?
(b) Write the process of endospore formation in bacteria. 8,6

UNIT—III

- V. (a) *Bacillus subtilis* divides after every 30 min. How many cells will be present after 3 h of incubation if the starter inoculum contains 100 cells ?
(b) What is the growth rate constant ? Derive the mathematical expression of it. 6,8
- VI. (a) Which sterilization method would be best for the following :
(i) Nutrient medium
(ii) Antibiotic solution
(iii) Scalpel
(iv) Petri plates
(v) Buffer solution ?
(b) What is the pasteurization process ? How is it different from the moist heat sterilizing process ? 6,8

UNIT—IV

- VII. (a) What is the difference between symbiosis and antibiosis ? Give their examples.
(b) Indiscriminate use of antibiotics is a major threat to human beings. Comment. 7,7
- VIII. (a) Discuss any two viral borne diseases and their causative agents.
(b) Write the significance of natural microflora in humans. 8,6

UNIT-V

IX. Attempt **all** the following :—

- (a) What is the difference between monoauxic and diauxic growth curves ?
- (b) Write the difference between chemostat and turbidostat.
- (c) What is synchronous growth ? How it can be obtained ?
- (d) What is an antibiotic ? Who discovered it and how ?
- (e) Write the difference between vegetative cells and endospores.
- (f) Write the significance of 16s sequencing in microbial classification.

6×2=12