

(i) Printed Pages: 3

Roll No.

(ii) Questions : 9

Sub. Code :

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Exam. Code :

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B.Sc. (Hons.) Biotechnology 2nd Semester
(2054)

GENERAL MICROBIOLOGY

Paper : BIOT-206-T

Time Allowed : Three Hours]

[Maximum Marks : 67

Note :—Attempt **FIVE** questions in all, including Question No. 9 (Unit III) which is compulsory and selecting **TWO** questions each from Units I–II.

UNIT—I

1. (a) Discuss the contribution of Louis Pasteur to microbiology.
(b) Write the Koch's postulates and their clinical significance. 6,7
2. (a) Write the principle and functioning of a compound microscope.
(b) Define the resolving power of a microscope. How it is related to the refractive index of the medium ? 6,7
3. (a) Discuss different methods for bacterial classification.
(b) What are gram-negative bacteria ? Explain the cell wall structure of gram-negative bacteria. 6,7

4. (a) What are endospores ? Discuss the process of sporulation in bacteria.
- (b) Classify fungi based on their morphology. Give a few examples of each. 6,7

UNIT—II

5. (a) Discuss the importance of each stage of a bacterial growth curve.
- (b) Explain the effect of different physical factors on bacterial growth. 6,7
6. (a) What is the sterilization process ? Discuss different chemical methods for sterilization.
- (b) When bacteria are grown in the presence of glucose and lactose, what changes are observed in the growth curve and why ? 6,7
7. (a) What is symbiosis ? Discuss the role of microbes involved in symbiotic relationships.
- (b) What are opportunistic pathogens ? Why are they major problems in tertiary healthcare ? 6,7
8. (a) Bacteria are omnipresent due to their nutritional diversity. Comment on the statement.
- (b) Which components of the human immune system play the role in the first line of defense ? 7,6

Attempt the following :

- (a) What is the difference between obligate and facultative aerobes ?
- (b) What is the doubling time of bacteria ?
- (c) What is the role of catalase ?
- (d) What is differential staining ? Give an example of it.
- (e) What are interferons ?
- (f) What are retroviruses ?
- (g) What is pasteurization ?
- (h) What is the effect of UV rays on bacterial viability ?
- (i) Which method can be employed for purifying a bacterial culture and why ?
- (j) What are antibiotics ? Why their indiscriminate use is a major threat to human well-being ?

10×1.5=15