

(i) Printed Pages : 3

Roll No.

(ii) Questions : 9

Sub. Code :

2	5	9	3	8
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Exam. Code :

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M.Sc. Bio-Technology 1st Semester

(2124)

MICROBIAL DIVERSITY AND METABOLISM

Paper—MBIO-103

Time Allowed : Three Hours]

[Maximum Marks : 80

Note :— Attempt *five* questions in all. Question No. 1 is compulsory and select *one* question from each unit.

1. Answer the following briefly :

- (a) Differentiate between Gram positive and Gram negative bacteria.
- (b) Define Pasteurization. Write its types.
- (c) Write Koch's Postulates.
- (d) Define Growth rate and Generation time.
- (e) How endospores are resistant to extreme conditions ?
- (f) Define thermophiles and halophiles with example.
- (g) Write names of any two culture collection centres.
- (h) Differentiate between exotoxins and endotoxins.

2×8=16

UNIT—I

2. (a) Write major contributions of any two scientists in the field of Microbiology.
(b) Explain Physical methods of sterilization briefly.
(c) Define pure culture. Explain methods for isolating pure culture. 6,6,4
3. (a) Explain spontaneous generation controversy.
(b) Explain chemical methods of sterilization briefly.
(c) Describe culture media and its types. 6,6,4

UNIT—II

4. (a) Explain Bacterial growth curve and Mathematical expression of growth.
(b) Explain various methods of storage and preservation of microbial culture.
(c) Describe various characteristics of Mycoplasma. 6,5,5
5. (a) Explain Synchronous and Continuous growth.
(b) Explain Archaeobacteria and its types.
(c) Describe characteristics of rickettsias and chlamydias. 6,5,5

UNIT—III

6. (a) Explain cell wall of Gram positive and Gram negative bacteria with diagram.
(b) Explain life cycle of any RNA virus. 8,8

7. (a) Explain lytic and lysogenic cycle of viruses.
(b) What are endospores ? Explain various stages of endospore formation with the help of diagram. 8,8

UNIT—IV

8. (a) Explain microflora of human (skin, oral cavity and gastrointestinal tract).
(b) What are Sulfa drugs ? Describe the mode of action of sulfa drugs. 10,6
9. (a) Explain virulence and microbial pathogenicity. Describe the process of adhesion and invasiveness of microbial pathogens.
(b) Briefly describe the mode of action of antibiotics. 10,6