

Exam. Code: 0907  
Sub. Code: 6692

1129  
B.E. (Biotechnology) Third Semester  
BIO-312: Microbiology

Time allowed: 3 Hours

Max. Marks: 50

**NOTE:** Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Answer the following briefly:-

- a) Who is the father of Microbiology?
- b) Define Type species
- c) Give two important characteristics of viruses
- d) Transformation is \_\_\_\_\_.
- e) Name the three parts of a flagella
- f) Give the function of cryoprotectants
- g) Differentiate between mutualism and commensalism
- h) Name two diseases caused by fungi
- i) Define lithotrophy
- j) Differentiate between lichens and mycorrhiza. (10x1)

UNIT - I

- II. a) Give your opinion on the importance of microorganisms.  
b) Explain the swan neck experiment.  
c) Compare the plasma membrane to the outer membrane in eubacteria. (3,3,4)
- III. a) Briefly explain the steps of a viral lytic cycle.  
b) What is a pure culture? Explain the different preservation methods. (5,5)
- IV. a) Describe the growth curve in bacteria.  
b) Explain any five methods of controlling growth. (5,5)

UNIT - II

- V. What do you understand by aerobic respiration? Draw the EMP pathway and TCA cycle to elaborate on the same. Give examples of aerobic microorganisms. (10)
- VI. a) Differentiate between mutation and recombination.  
b) Describe the replica plating experiment and give its significance.  
c) Give the goals which any classification should achieve. (3,5,2)
- VII. **Detail the nitrogen cycle.** (10)

x-x-x