



PR-003-1194001

Seat No. _____

**M. Sc. (Microbiology) (Sem. IV) (CBCS)
(W.E.F. 2016) Examination**

August - 2020

**Micro-419 : Molecular Phylogeny & Diversity
(Core - I)**

Faculty Code : 003

Subject Code : 1194001

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

Instructions : All questions are compulsory. Write the answers with suitable illustrations where required.

- 1 Answer Any **Seven** : (2 marks each) 14
- (a) Comment on the concept of Non-Cultivability.
 - (b) What are the chronometers in the context of evolution?
 - (c) What is non-symbiotic N₂-fixation?
 - (d) Highlight the significance of microbiome in its ecosystem.
 - (e) Can we enhance the cultivability of the microorganisms from a given habitat?
 - (f) What is molecular phylogeny?
 - (g) What are various softwares used for the construction of the phylogenetic tree?
 - (h) Enlist molecular methods to study the taxonomy of the cultivate microorganisms.
 - (i) Signify the Gram reaction in the bacterial taxonomy.
 - (j) Can we us antibiotic sensitivity to diversity the microbial community? Comment.

- 2** Write comments on Any **Two** : **7×2=14**
- (a) Biochemical and physiological parameters in microbial taxonomy
 - (b) Symbiotic Nitrogen fixing bacteria and their taxonomy
 - (c) Molecular methods in the microbial taxonomy.

- 3** Comment on : (7 marks each) **14**
- (a) Phylogenetic trees and the three domains of life
 - (b) Biotechnological avenues of the non-cultivable microorganisms.

OR

- 3** Write comments on : (7 marks each) **14**
- (a) Appendaged betaproteobacteria
 - (b) Concept and methods of the metagenomics.

- 4** Comment on : (7 marks each) **14**
- (a) Actinomycetes : Basic features and Ecological significance
 - (b) Nonproteobacterial phyla.

- 5** Comments on Any **Two** : (7 marks each) **14**
- (a) Clostridia
 - (b) Lactobacillaceae
 - (c) Low G + C bacteria
 - (d) Nucleic acid in the assessment of the microbial diversity.
