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PR-003-019401 Seat No. _____

M. Sc. (Microbiology) (Sem. IV) (CBCS) Examination

August - 2020

Micro-419 : Molecular Phylogeny & Diversity

(Core - I)

Faculty Code : 003

Subject Code : 019401

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

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

1 Answer Any **Seven** : (2 Marks each) **14**

(a) What is Non-Cultivability ?

(b) Comment on the chronometers.

(c) What is the symbiotic N_2-fixation ?

(d) Comment on the microbiome and ecosystem.

(e) What could be the reasons of the non-cultivability of the microorganisms?

(f) What is molecular phylogeny?

(g) Enlist various softwares and their applications in the construction of phylogenetic tree.

(h) Enlist molecular methods in the microbial taxonomy.

(i) How Gram reaction is important in bacterial taxonomy ?

(j) Correlate antibiotic sensitivity-resistance with the diversity of the microbial community.

2 Write comments on Any **Two** : **7×2=14**

(a) Biochemical parameters employed in the microbial taxonomy

(b) Non-Symbiotic Nitrogen fixing bacteria and their taxonomy

(c) Molecular methods in the microbial taxonomy

3 Comment on : (7 marks each) **14**

(a) Three domains of life

(b) Biotechnology and non-cultivable microorganisms

OR

3 Write comments on : (7 marks each) **14**

(a) Betaproteobacteria

(b) Methods of the metagenomics

4 Comment on : (7 marks each) **14**

(a) Habitats, basic features and ecological significance of the Actinomycetes

(b) Proteobacterial phyla

5 Comments on Any **Two** : (7 marks each) **14**

(a) Clostridia

(b) Lactobacillus

(c) Low G + C bacteria

(d) Nucleic acid hybridization in the microbial diversity
