



Seat No. \_\_\_\_\_

**H-003-1194001**

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

**April - 2023**

**MICRO-419 : Molecular Phylogeny & Diversity**

**Faculty Code : 003**

**Subject Code : 1194001**

Time :  $2\frac{1}{2}$  Hours / Total Marks : 70

- 1** Answer the following (Any Seven, Each of 02 Marks) **14**
- (1) What is microbial phylogeny ?
  - (2) What is the molecular characterization of microorganisms ?
  - (3) How do you study non-cultivable bacteria ?
  - (4) What is T-RFLP ?
  - (5) Give the principle of ARDRA technique.
  - (6) Enlist the steps involved in PCR.
  - (7) Enlist features of proteobacteria.
  - (8) Enlist key genera of alpha-proteobacteria.
  - (9) Give characteristics of *Bdellobivbrio*.
  - (10) Why are *Clostridia* anaerobes ?
- 2** Answer the following (Any Two, Each of 07 Marks) **14**
- (a) Write a note on microbial evolution and phylogeny.
  - (b) Describe the phylogenetic tree.
  - (c) Write a short note on analysis of microbial diversity.
- 3** Answer the following (Each of 07 Marks) **14**
- (a) What is DGGE ? Describe.
  - (b) What is RFLP ? How is it used for studying non-cultivable microbes ?

**OR**

- 3** Answer the following (Each of 07 Marks) **14**
- (a) Discuss the metabolic potential of non-cultivable microbes.
  - (b) Write a note on the evolutionary significance of non-cultivable microbes.
- 4** Answer the following (Each of 07 Marks ) **14**
- (a) Describe beta proteobacteria in detail.
  - (b) Explain the epsilon group of proteobacteria.
- 5** Answer the following (any Two, Each of 07 Marks) **14**
- (a) What are Actinobacteria ? Explain.
  - (b) Provide an account on low G + C bacteria.
  - (c) Elaborate on Lactobacilli.
  - (d) Write a short note on Clostridia.
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