



PR-003-1134001

Seat No. _____

M. Sc. (Biotechnology) (Sem. IV) (CBCS)

(W.E.F. 2016) Examination

August - 2020

BT-418 : Molecular Phylogeny & Extremophiles

(Core)

Faculty Code : 003

Subject Code : 1134001

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

[Total Marks : 70

Instruction : All questions are compulsory. Support your answers with suitable illustrations where required.

1 Answer Any Seven : (2 Marks each) 14

- (a) Define chronometers.
- (b) Comment on the significance of molecular hybridization in bacterial taxonomy.
- (c) Comment on the Non-cultivability of the microorganisms.
- (d) What are different biochemical parameters significant in bacterial taxonomy?
- (e) What is the significance of the extraction of metagenomic DNA?
- (f) Comment on the concept of the extremophily?
- (g) What are various molecular methods to assess the microbial diversity?
- (h) Correlate the archaea and eubacteria?
- (i) What are various habitats of thermophilic nature?
- (j) How ultraextremity of a habitat affects its microbial diversity?

2 Write comments on Any Two : 7×2=14

- (a) Methods in microbial taxonomy
- (b) Significance of the studies of the extremophiles
- (c) Molecular methods to study microbial taxonomy

- 3** Write comments : (7 marks each) **14**
(a) Metabolic potential of non-cultivable microorganisms
(b) Adaptations in hyper halophiles

OR

- 3** Write comments : (7 marks each) **14**
(a) Applications of thermophilic bacteria and archaea
(b) Method and significance of DGGE

- 4** Write comments : (7 marks each) **14**
(a) Concept and Methods of Metagenomics
(b) Adaptations in Hyper thermophilic bacteria and archaea

- 5** Comment on Any **Two** : (7 marks each) **14**
(a) Alkaliphiles and their applications
(b) Bioremediation mediated by the extremophiles
(c) Regulation of gene expression in halophiles/thermophiles
(d) Extreme habitats
