647510 **MSC4mpdC0110** **Seat No: _____**

M.Sc.(Micro) Semester - 4 (CBCS) Examination
March/April- 2019
MOLECULAR PHYLOGENY AND DIVERSITY
(CORE)

Time: 2:30 Hours **Marks: 70**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q 1 ANSWER THE FOLLOWING (ANY SEVEN) **14**

1. What are Stromatolites ? How are they taxonomically useful ?
2. On what basis we can calculate Tm value of DNA ?
3. Give names of Universal Primers of 16s rRNA gene suggested by Weisburg et al.
4. What is the principle of TGGE ?
5. What is SIP and TRFLP ?
6. What is LMPCR ?
7. Which organisms belong to Zetaproteobacteria ?
8. The order Burkholderiales and Neisseriales belong to which class of Proteobacteria?
9. Which kind of Proteobacteria are Paraphyletic ?
10. What are the salient features of Mycoplasma ?

Q 2 ANSWER THE FOLLOWING (ANY TWO) **14**

1. Describe isolation of DNA for taxonomic and phylogenetic purposes.
2. Write a descriptive note on methods of 16s rRNA analysis.

Q 3 ANSWER THE FOLLOWING

A) Discuss "simulated environment" and "Co culturing" as approaches for cultivating VBNC microbes ? **05**

B) Explain ARDRA **04**

C) Describe the suitable electrophoretic method for separating the DNA fragments of similar size but variable sequence. **05**

OR

Q 3 ANSWER THE FOLLOWING

A) Discuss the significance and metabolic potential of non cultivable microbes. **07**

B) Describe metagenomic approaches of studying non cultivable microbes. **07**

Q 4 ANSWER THE FOLLOWING (ANY TWO) **14**

1. Describe features of Gm Negative Proteobacteria
2. Which Gm Negative microbial groups are included in non proteobacteria ? Explain.
3. Explain distribution and significance of alpha and beta proteobacteria.

Q 5 ANSWER THE FOLLOWING (ANY TWO) **14**

1. Discuss the characteristics of Actinobacteria in detail.
2. Discuss the pathogenicity and importance of Clostridia.
3. What are the applications of Bacilli and Lactobacilli ?
4. Describe low G + C Bacteria in detail.

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