

M.Sc. Semester - 4 (CBCS) Examination**March/April- 2018****EXTREMOPHILES****(CORE)****Time: 2:30 Hours****Marks: 70****Instructions:**

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

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- Que-1 Answer the following (Any seven out of Ten, each of 02 marks) (14)
1. What are different types of extremophiles?
 2. What is microbial adaptation?
 3. What is an extreme environment?
 4. Enlist applications of thermozymes
 5. What is the difference between a Psychrophile and a Psychrotroph?
 6. What does alkaliphiles mean?
 7. What is an osmophile?
 8. Where can thermophiles be found?
 9. How do methanogens produce ATP?
 10. What are the characteristics of methanogens?
- Que-2 Answer the following (Any two out of Three, each of 07 marks) (14)
- a. Write a note on taxonomic position and phylogenetic groups of Archaea.
 - b. What are eukaryotic extremophiles? Discuss.
 - c. How would you differentiate eubacteria and Archaea?
- Que-3 Answer the following (a & b –Both are compulsory, each of 07 marks) (14)
- a. Write a note on physiology and adaptive strategies of Archaea.
 - b. Briefly discuss ecology and habitats of Archaea.
- OR**
- Que-3 Answer the following (a & b –Both are compulsory, each of 07 marks) (14)
- a. What are halophiles? Describe halophiles in context to the osmoadaption.
 - b. Write a note on “ Life at hyper extremities”
- Que-4 Answer the following (each of 07 marks) (14)
- a. Write a note on “Protein stability in hyper-extremophiles”.
 - b. Describe distribution and diversity of psychrophiles.
- Que-5 Answer the following (Any two out of four, each of 07 marks) (14)
- a. Briefly describe classification and applications of acidophiles.
 - b. Describe applications of halophiles and their extremozymes.
 - c. Write a note bioenergetics and biochemistry methanogens
 - d. Write a note on Barophiles.
