

**JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT**

**TEST -2 EXAMINATION- 2023**

**M. Tech./Ph.D. I Semester (Biotechnology)**

**COURSE CODE (CREDITS): 18M1WBT134 (03)**

**MAX. MARKS: 25**

**COURSE NAME: Microbial Ecology**

**COURSE INSTRUCTORS: Ashok Kumar Nadda**

**MAX. TIME: 1.5 Hours**

*Note: (a) All questions are compulsory.*

*(b) Marks are indicated against each question in brackets.*

*(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems*

**Section I**

**Q 1 Very short answer type questions**

- a) Write the name of microbial genus that has only psychrophilic life and not found in mesophilic conditions? **(Mark 1)**
- b) Give an example of Gram +ve bacteria that can grow at -12°C? **(Mark 1)**
- c) Write the unique cell characteristics of archaea. **(Mark 1)**
- d) What are oligotrophic organisms and how they can grow under extreme conditions **(Mark 1)**
- e) What is commensalism? Give an example of commensalism type of interaction. **(Mark 1)**

**Section II**

**Q 2 Give a brief account of halophilic archaea? Explain with suitable examples (Marks 2.5)**

**Q 3 What are nematophagous fungi? How does the nematophagous fungi follow the parasitism and predation in animal-microbe interaction. (Marks 2.5)**

**Q 4 Describe the ecological habitat of barophiles. How does the barophiles adapt themselves to the extreme environment in which they live? (Marks 2.5)**

**Q 5 Write the major characteristics of Nanoarchaeota. Give suitable example. (Marks 2.5)**

### Section III

**Q 6** Illustrate the mechanism of symbiosome formation. Give the example of plants and microbes that show symbiotic association and fix atmospheric nitrogen. **(Marks 4)**

**Q 7** Write a brief note on following items

- a) Syntrophism
- b) Ammensalism
- c) Protocooperation
- d) Competition

**(Marks  $1.5 \times 4 = 6$  Marks)**

JUNIT TEST-2 EXAMINATION - Oct 2023