

**JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT**

**TEST -2 EXAMINATIONS-2022**

M. Tech. Ist Semester (BT)

COURSE CODE (CREDITS):18M1WBT134

MAX. MARKS: 25

COURSE NAME: **Microbial Ecology**

COURSE INSTRUCTORS: **Dr. Ashok Kumar Nadda** MAX. TIME: 1 Hour and 30 minutes

*Note: All questions are compulsory. Marks are indicated against each question in square brackets.*

**Section I**

Q1. Answer the following questions.

- a) What are symbiosomes? Explain with a help of a diagram. (Mark 1)
- b) What is mycorrhiza and also write about its various types. (Mark 1)
- c) Give one examples of each Symbiosism and protooperation. (Mark 1)
- d) How does the commensalism differ from ammensalism? Explain with suitable example (Mark 1)
- e) Write a note on microbial guilds? (Mark 1)

**Section II**

Q 2 Discuss the various mechanism of action of nematophagous fungi used to kill the fungal species? Explain with suitable examples (Marks 2.5)

Q 3 Give a brief account of Quorum sensing and how does it help in the survival of microorganisms. (Marks 2.5)

Q 4 Discuss the various steps involved in the formation of biofilms (Marks 2.5)

Q 5 Discuss the various adaptation mechanisms of thermophiles to ensure their survival in high temperature conditions (Marks 2.5)

**Section III**

Q 6 What are the various ecological habitats of Psychrophiles? How do these organisms survive in such extreme low temperature environments? (Marks 3)

Q 7 Discuss the various steps involved in the development of root nodules and what type of interaction are involved between plant and microorganisms. Give examples. (Marks 3.5)

Q 8 Discuss the role of microorganism to maintain the Carbon and sulphur cycle. (Marks 3.5)