

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-1 EXAMINATIONS-2024

M. Sc. I Semester (MICROBIOLOGY)

COURSE CODE (CREDITS): 21MS1MB113 (2)

MAX. MARKS: 15

COURSE NAME: FUNGAL BIOLOGY

COURSE INSTRUCTOR: DR. JATA SHANKAR

MAX. TIME: 1 Hour

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

Q1. Describe fungi's basic character/ features that enable fungi to differentiate from Bacteria, Animalia and Plantae. Provide suitable data/examples to explain it. [3 marks] COI

Q2. Mucorales are fast-growing, thermo-tolerant fungi that are ubiquitous in soil, on fruit, dust, and decaying vegetation worldwide. Mucorales are considered opportunistic pathogens, requiring a suppressed immune system or another underlying condition to cause disease, and are the third most common cause of IFIs in **immunocompromised** patients. What is the importance of the asexual and sexual mode of reproduction in Mucor and what types of sexual mode of reproduction occur in Mucor? Also, Describe the life cycle of Mucor with their infective stage. [3 marks] COI

Q3. What are the structural developments in fungi while infecting or invading the plant? What is the role of melanin in preparing the fungi to protect it from host defence [3 marks] COI

Q4. *Saccharomyces cerevisiae* as a model organism; given an example on cell cycle gene 'cdk' [3 marks] COI

Q5. a. What is the role of 18S rRNA (18S ribosomal RNA) in phylogenetic tree analysis [1.5 marks] COI

b. What are the different ways of conidia formation, explain with a suitable example. [1.5 marks] COI