

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

Make-up Examination-Nov-2025

COURSE CODE (CREDITS): 21MS1MBT113 (2)

MAX. MARKS: 25

COURSE NAME: FUNGAL BIOLOGY

COURSE INSTRUCTORS: DR. JATA SHANKAR

MAX. TIME: 1 Hour 30 Minutes

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

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

Q.No	Question	Marks
Q1	What is aflatoxin and explain its biological significance? Discuss the different types of aflatoxins produced by <i>Aspergillus flavus</i> and their toxicological importance. Illustrate the general chemical structure of aflatoxin, describing its key functional groups and molecular characteristics that contribute to its stability and toxicity.	4
Q2	Describe the various stages in the life cycle of the model organism <i>Saccharomyces cerevisiae</i> . Explain both the haploid and diploid phases, including the processes of budding, mating, sporulation, and germination. Discuss the approximate time duration required for <i>S. cerevisiae</i> to complete one full life cycle under optimal laboratory condition?	4
Q3	Describe the classification of fungi based on their morphological, reproductive, and molecular characteristics. Explain the major groups of fungi with suitable examples and distinguishing features of each group.	4
Q4	What is Tempeh? Describe its method of production, the microorganisms involved in its fermentation process, and its nutritional and health significance. Discuss how microbial activity contributes to the texture, flavor, and digestibility of Tempeh	4
Q5	What are mushrooms? Describe their structure, classification, and life cycle. Explain the process of mushroom cultivation and discuss their nutritional, medicinal, and economic importance	4.5
Q6	Fungal pathogens of plants can penetrate the intact surface of their hosts by forming specialized infection structures. Describe the different types of infection structures developed by plant pathogenic fungi and explain their roles in host invasion	4.5