

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-3 EXAMINATION-2024

M.Sc.-I Semester (BT)

COURSE CODE (CREDITS): 21MS1MBT113 (2)

MAX. MARKS: 35

COURSE NAME: FUNGAL BIOLOGY

COURSE INSTRUCTORS: DR. JATA SHANKAR

MAX. TIME: 2 Hour

Note: (a) All questions are compulsory.

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

Q. No	Questions	Marks
Q1	a. What is mycotoxin and what are its types (aflatoxin)? Example two mycotoxin-producing fungal species?	2
	b. What do you mean by one health approach and what are the permissible limits of aflatoxin contamination in food crops?	2
Q2	a. What is the role of auxotrophic markers in selecting yeast transformants? How does the use of such markers aid in the identification of successful transformations?	2
	b. What key features make yeast vectors suitable for gene cloning, expression, and protein production? Provide examples of vectors designed for specific purposes	2
Q3	Describe the role of fungi in functional metagenomics in high-yielding agricultural crop fields.	2
Q4	How many ethanol molecules are produced from 20 molecules of glucose during a fermentation process mediated by yeasts?	4
Q5	Name two or more species belonging to Zygomycota and their economic/ agricultural or industrial relevance of medical importance.	4
Q6	<i>Saccharomyces cerevisiae</i> serves as a model organism and illustrates the stages in the life cycle of the model organism. or the life cycle of pathogenic fungi such as a mucor	2
Q7	Notes on	
	a. Tempeh or Sake	2.5
	b. Hallucinogenic compounds derived from fungi	2.5
	c. Application of fungi Bioremediation	2.5
	d. Difference between Native and Cultivated yeasts	2.5
Q8	Demonstrate the protein-protein interactions using yeast two-hybrid systems. What is genome size, number of chromosomes and estimated number of genes in Yeast?	5