

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2025

M.Sc-IV Semester Microbiology (BT/BI)

COURSE CODE (CREDITS):21MS1MB411(03)

MAX. MARKS: 35

COURSE NAME: Food and Dairy Microbiology

COURSE INSTRUCTORS: Dr Anil Kant, Dr V. Garlapati

MAX. TIME: 2 Hours

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	<p>a. Write about the three principal types of flavourings used in foods? Summarize How the "distillation" differs with the "extraction" for isolation of flavours?</p> <p>b. Discuss about the "Monosodium glutamate" and "5' nucleotides" used as the flavour enhancers? Briefly describe the different dietary ingredients considered as the dietary supplements in the food industry?</p> <p>c. Summarize the different characteristics lacking in foods prepared without microbes as starter culture? Classify the starter cultures based on the preservation method?</p>	9
Q2	<p>a. Recognize four discrete points regarding the importance of fungi and molds in food and food environments. Briefly discuss the physiological characteristics of common molds with respect to i) Moisture requirements ii) Temperature iii) Oxygen and pH Requirements iv) Food Requirements</p> <p>b. Write about key characteristics, important species and significance for food and food environment (spoilage / food borne diseases / food production) of any three of following bacterial genera i) Bacillus sp ii) Pseudomonas fluorescens iii) Salmonella iv) Acetic acid bacteria</p> <p>c. Identify general characteristics of lactic acid bacteria? Briefly discuss key characteristics and significance of genera <i>Lactococcus</i> in dairy fermentation. How culture can be exploited to ensure presence of <i>Lactococcus lactis subsp. cremoris</i> in dairy fermentations?</p>	9
Q3	<p>a. Outline the manufacturing steps involved in manufacturing of Soya sauce and discuss the organisms involved at different stages during fermentation.</p> <p>b. Give any five discrete points for Tempeh becoming a very popular fermented food in the USA. Discuss the manufacturing process tempeh including fermentation, morphology and biochemistry, spoilage and defects</p> <p>c. Discuss the manufacturing process of cheese. Explain at least two classes of cheese according to ripening method and texture.</p>	12
Q.4	Write and brief note on any two of following food preservation methods i) Canning ii) Pickling iii) Vacuum Packaging	5