JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -2 EXAMINATION- 2025
M.Sc.-IVSemester (Microbiology)

COURSE CODE (CREDITS):21MS1MB411(03) MAX. MARKS: 25
COURSE NAME: Food and Dairy Microbiology
COURSE INSTRUCTORS:Dr Anil Kant, Dr V. Garlapati MAX. TIME: 1 Hour 30 Min

Note: *(a) All questions are compulsory. Use of a calculator is allowed.*
(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Questions	Marks
Q1	a. Write a detailed note on principle, methodology and standards used to test microbiological quality of milk using Methylene blue reduction test. 4 b. A milk sample was able to discolor methylene blue in 20 minutes in a standard test? What would be your assessment about its quality? 2	6
Q2	a. Explain the principle and procedure of direct microscopic counting (DMC) method using the estimated microbial quality of milk. How are the area of the microscopic field and number of microscopic fields calculated? b. Calculate the numbers of microorganisms per ml of milk with following parameters; average numbers of cells per microscopic field=18, field view of microscope=20, magnification of objective = 40X, area of smear 1 cm^2	6
Q.3	a. The big central square of haemocytometer (0.01x0.01x0.001 cm^3) having 25 small squares was used for estimation of microbial cells in food samples. The average number of cells observed in the small square was 15.5. Calculate the number of microbial cells per ml of food which has been diluted 100 times. b. Write a detailed note on the different levels of testing coliforms in food or milk samples	6
Q.4	a. Write about the characteristics of the fermented milk product "Yoghurt" along with the associated health benefits? Differentiate the cultured milk "KUMISS" from "KEFIR" in terms of characteristics and microbial composition? b.How is "Nutraceutical" different from "Pharmaceutical"? Write about the different functional components of "Carotenoids" by mentioning the source and potential benefits?	7