JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST - 1 EXAMINATION- 2026

M.Sc. (Biotechnology) - I Semester

COURSE CODE (CREDITS): 20MS1BT114 (2) MAX. MARKS: 15

COURSE NAME: MICROBIOLOGY

COURSE INSTRUCTORS: Dr. Rahul Shrivastava MAX. TIME: 1 Hour

Note: All questions are compulsory.

JUIT EXAMINATION AUG-2025

Q. No.	Question	Marks
Q1.	**Case Studies:** Analyze the following scenarios during Gram Staining of both Gram-positive and Gram-negative types of bacteria: **(Case 1):** The student forgot to add 96% Ethanol during Gram Staining procedure. Predict and explain the visual outcome under the microscope for both Gram-positive and Gram-negative types of bacteria. **(Case 2)**: The student flooded the slide with the decolorizer for 15 minutes. What affect will it have on the classification accuracy of Gram-positive and Gram-negative cells?	[2] [2]
Q2.	Differentiate between chemically defined (synthetic) media and complex (undefined) media with examples. Provide one specific research scenario where a defined medium is mandatory over a complex medium.	[3]
Q3.	Compare the advantages, limitations and application of Pour Plate and Spread Plate Methods.	[3]
Q4.	Trace the milestone experiments of Louis Pasteur that disproved the theory of spontaneous generation and established the concept of biogenesis.	[5]