

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -1 EXAMINATION- 2025
M.Sc.-II Semester (Biotechnology and Microbiology)

COURSE CODE (CREDITS): 20MS1BT215 (3)

MAX. MARKS: 15

COURSE NAME: Molecular Diagnostics & Forensic Biology

COURSE INSTRUCTORS: Dr. Jitendraa Vashistt

MAX. TIME: 1 Hour

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.	Explain the nuclear architecture with respect to nucleosome. Define the various modifications of histone proteins for gene transcription activation and repression.	3
Q2	How do you differentiate between silent mutation and missense mutation? Justify your answer with suitable example.	3
Q3	Explain the classification of chromosomes based upon location of centromere. Is there any method based on chromosome detection and number for molecular diagnostics of a disease? Justify your answer with suitable example.	3
Q4.	A person went to a clinic with a medical history of muscular cramps and fever. When clinician enquired related to food, person told him that he had taken water based food item from outside past day. Clinician suspected the bacterial infection and advised him to go molecular method. Define the molecular method and its principle for detection of bacterial identification which was advised by clinician.	3
Q5.	Define the traditional diagnostics methods for pathogen. Explain the sequence of identification and also elucidate their limitations in detection of pathogen.	3