

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -2 EXAMINATION- 2026

M.Tech-II Semester (BT)

COURSE CODE (CREDITS):20M1WBT234 (3)

MAX. MARKS: 25

COURSE NAME: Clinical Diagnostics

COURSE INSTRUCTOR: Dr. Jitendraa Vashistt

MAX. TIME: 1 Hour 30 Min

Note: (a) All questions are compulsory. (b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems. (c) Use of calculators is not allowed.

Q. No.	Question	Marks
Q1	Explain the method of quality control of Polymerase chain reaction using positive and negative control. You also define the method of proof for identification of PCR product of a specific gene.	5
Q2	Define the following in brief. a) Benefits and limitation of Telemedicine b) Fluorescent <i>in-situ</i> hybridization	5
Q3	You get a cultured bacterial sample from a diseased person and clinician suspected the chances of bacterial infection. How do you proceed for identification of this bacterial pathogen using molecular biology methods? Explain the principle of molecular identification.	5
Q4	Usually molecular diagnostic methods are based on the DNA genetic markers; however the RNA may also be used for the specific detections. Explain the need to RNA based diagnostic strategy where you need to use the Polymerase chain reaction also. Explain the method of identification of pathogen using suitable example.	5
Q5	Explain the principle and detection method of coliform in a sample? What is the inference of the presence of a coliform in drinking water? Also explain the diarrheal disease caused by a common coliform. Justify your answer with reference to the above asked coliform.	5