

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2024

M.Tech-I Semester (BT/BI)

COURSE CODE (CREDITS):13M11BT111 (3)

MAX. MARKS: 35

COURSE NAME: Advances in Molecular Cell Biology

COURSE INSTRUCTORS: Dr. Udayabanu

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	Assess the regulation of apoptosis through intrinsic and extrinsic pathways and design a study to evaluate apoptosis.	6
Q2	Justify the role of cell cycle checkpoints, cyclins, and cyclin-dependent kinases (CDKs) in the regulation of the cell cycle and their importance in preventing cancer development	6
Q3	Explain the general principles of cell communication and the role of cell surface receptors in mediating cellular responses	6
Q4	Evaluate the CRISPR/Cas system by addressing the following aspects: Its components and mechanism; Applications in gene editing.	6
Q5	Describe the stages of the cell cycle, outlining the key events in each phase	5
Q6	Review the processes of RNA synthesis and processing in eukaryotes, focusing on the roles of RNA polymerases, RNA editing, splicing, and polyadenylation	6