JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2025

M.Tech-II Semester (CSE)

MAX. MARKS: 25

COURSE CODE (CREDITS): 18M1WCI116

COURSE NAME: Security Design and Architecture

COURSE INSTRUCTORS: Mr. Saurav Singh

MAX.TIME: 1.5 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	CO	Marks
Q1	Define the CIA triad in cybersecurity. Explain how each principle (Confidentiality, Integrity, Availability) contributes to a secure architecture. How does Role-Based Access Control (RBAC) enforce confidentiality? Provide an example of RBAC implementation in a corporate network.	CO6	3+2
Q2	Explain the concept of "Defense in Depth" in cybersecurity architecture. Provide examples of security controls at different layers.	CO5	5
Q3	Discuss how Secure Software Development Lifecycle (SSDLC) helps reduce vulnerabilities. Mention at least three security practices integrated into SSDLC.	CO4	5
Q4	How does a Security Information and Event Management (SIEM) system work? Discuss its role in log analysis and real-time threat monitoring.	CO7	5
Q5	How does Identity and Access Management (IAM) enhance cybersecurity? Discuss the concepts of Multi-Factor Authentication (MFA) and Least Privilege Access in the software industry..	CO7	5