

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2025

M.Tech-I Semester (CSE)

COURSE CODE (CREDITS): 18M1WCI115

MAX. MARKS: 15

COURSE NAME: Secure Software Design

COURSE INSTRUCTORS: Dr. Nishant Sharma

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	CO	Marks
Q1	(i) Explain the concept of Least Privilege and how it enhances security in software systems. (ii) A company maintains a secure system where the probability of a successful cyber attack is 0.02 per month. If the company operates for a year, calculate the probability that at least one attack will be successful during the year.	1	[2+2]
Q2	(i) Define the three core principles of secure systems: Confidentiality, Integrity, and Availability, with an example of each. (ii) Discuss how security can be integrated into Agile and DevOps methodologies. Provide two key strategies.	1	[2+2]
Q3	A software development team is transitioning from traditional development to a Secure Software Development Lifecycle (SSDLC) approach. Explain the key phases of SSDLC and how security is integrated at each stage.	2	[3]
Q4	Describe in detail following security frameworks: (i) OWASP (ii) NIST (iii) ISO 27001	1	[4]