JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2026

B.Tech. - VIII Semester (CSE/IT)

COURSE CODE (CREDITS): 25B1WCI742 (3) MAX. MARKS: 15

COURSE NAME: SYSTEMS SECURITY MANAGEMENT

COURSE INSTRUCTOR: DR. RAMESH NARWAL 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.

(c) Use of calculator is not allowed.

Q.No.	Question	CO	Marks
Q1	A company's file server is infected with ransomware, encrypting all important files. Management has no recent backup. Analyze this incident from the perspective of asset, threat, vulnerability, likelihood, impact, and risk.	3	3
Q2	A company has 4 users and 5 resources. Each user is granted access to exactly 3 resources. Calculate the maximum number of user-resource permission relationships. Explain how an access-control matrix can be used to represent these permissions.	2	3
Q3	A software vendor discovers that attackers have exploited a previously unknown vulnerability before a security patch was available. Explain the concept of a zero-day vulnerability and discuss suitable defensive measures.	3	3
Q4	A hospital uses usernames and passwords for all employees. An attacker obtains several passwords through phishing. Explain how multi-factor authentication (MFA) could reduce the risk and design an appropriate authentication mechanism.	2	3
Q5	A government organization wants to deploy an operating system for handling highly confidential documents. Explain at least six characteristics that should be incorporated into a secure OS design.	1	3

SUBMISSION- AUG-2026

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