JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2025

B.Tech-VII Semester (ECE)

COURSE CODE (CREDITS): 19B1WEC732 (3)   MAX. MARKS: 15

COURSE NAME: Forensic Image Processing

COURSE INSTRUCTORS: Lt. Pragya Gupta   MAX. TIME: 1 Hour

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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	(a) What is the difference between image manipulation and image forgery, and how can each be detected in forensic investigations? *(3 Marks)* (b) How can image forgery affect the credibility of digital evidence in forensic investigations? *(2 Marks)*	CO1	5
Q2	(a) In forensic image processing, morphological operations are often applied to enhance shoeprints, fingerprints, or tool marks found at crime scenes. Describe how the morphological closing operation can help in improving the quality of forensic images. *(3 Marks)* (b) In forensic document analysis, binarization of scanned text often introduces small white gaps within letters (e.g., "O" or "A"). Which morphological operation can be used to fill these gaps? *(2 Marks)*	CO1	5
Q3.	In forensic image processing, CCTV footage from a crime scene often appears dark and blurred, making it difficult to identify suspects. (a) Which image enhancement technique can be applied to improve the visibility in low-light regions? *(2 Marks)* (b) Explain how sharpening filters can assist forensic experts in recognizing facial features or objects from blurred footage. *(3 Marks)*	CO1	5