

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2025

B.Tech-VII Semester (ECE)

COURSE CODE (CREDITS):19B1WEC735 (3)

MAX. MARKS: 35

COURSE NAME: Forensic Image Processing

COURSE INSTRUCTORS: Lt. Pragya Gupta

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	CO	Marks
Q1	Describe sensor defects in digital cameras and explain how they help in forensic analysis.	CO3	5
Q2	Explain the concept of image and video source attribution in digital forensics. Describe the different traces used for attribution.	CO3	5
Q3	Explain the process of photo image comparison used in digital forensic investigation. Discuss different types of features used for comparison.	CO5	5
Q4	Describe the concept of image authentication. Explain passive and active authentication techniques in detail.	CO5	5
Q5	What is the purpose of using watermarking techniques in forensic image processing? How does it relate to cryptography?	CO4	5
Q6	(a) Define image compression. (b) Why is lossless compression preferred in forensic applications? (c) Give one example each of lossy and lossless compression techniques.	CO2	1+2+2=5
Q7	(a) Explain the role of image segmentation in forensic image analysis. How does it assist in evidence extraction? (b) What is the importance of feature extraction in forensic image matching (e.g., fingerprints or facial recognition)?	CO1	2.5+2.5=5