

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATIONS-2022

B.Tech-VII Semester (ECE)

COURSE CODE (CREDITS): 19B1WEC735 (3)

MAX. MARKS: 15

COURSE NAME: Forensic Image Processing

COURSE INSTRUCTORS: Dr. Nafis U. Khan

MAX. TIME: 1 Hour

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

Q1. Explain the term "Cyber Forensic". What is the role of digital image processing in cyber security and digital forensics?

CO1[3 Marks]

Q2. List out the various components of image processing used for carrying out a detailed cyber forensic investigation.

CO1[3 Marks]

Q3. Perform the discrete convolution on the following image matrices:

CO2[5 Marks]

$$X_1 = \begin{bmatrix} 1 & 4 & 1 \\ 2 & 5 & 3 \end{bmatrix} \text{ and } X_2 = \begin{bmatrix} 1 & 1 \\ 1 & -1 \end{bmatrix}$$

Q4. Explain the mechanism of edge detection in image segmentation using Gradient and Laplacian operators.

CO2[4 Marks]