

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2021

B.Tech VII Semester

COURSE CODE: 19B1WEC735

MAX. MARKS: 35

COURSE NAME: Forensic Image Processing

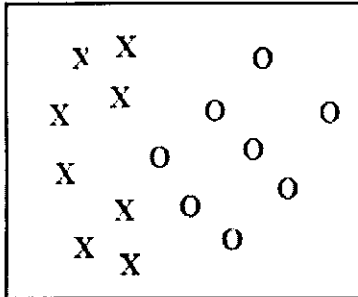
COURSE CREDITS: 03

MAX. TIME: 2 Hours

Note: All questions are compulsory. Carrying a mobile phone during examinations will be treated as a case of unfair means.

1. List and explain atleast three different types of image manipulation or image tampering cases where methodologies of image processing can be used for forensic investigation of images.
CO1 [3]
2. Write a MATLAB code to do the segmentation of the input image such that the program generates a segmented image with desired region appearing as white and background as black. Assume that the input image is present with a name "image1" and pixel values within the desired region lie in between 29 and 89.
CO2 [5]
3. Write a MATLAB code to generate a watermarked image using LSB (Least Significant Bit) Method.
CO4 [5]
4. List the quantitative parameters which can be used to analyse the efficiency of watermarking methods in terms of visual perception and robustness.
CO4[5]
5. For each of the following statements name the texture feature with reason that can best discriminate between the two images:
 - a. Two images have the same variations in the pixel intensities but one image has red shades whereas the second image has yellow shades.
 - b. One image has horizontal lines whereas the other image has lines oriented at an angle of 45°.CO5 [5]

6. Draw Artificial Neural Network for the classification of the samples of Class A and B as shown in the following figure given that samples of class A are represented by X whereas samples of class B are represented with O.



CO5 [4]

7. Write a brief note to explain how machine learning techniques can be used to identify the camera model with which image was captured.

CO3 [4]

8. Draw a general CNN model and write a short note on the following:

1. Pooling Layer
2. Relu Function

CO5[2+1+1]