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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- April-2019

PhD I Semester

COURSE CODE: 16M1WEC231   MAX. MARKS:25

COURSE NAME: ADVANCE DIGITAL IMAGE PROCESSING

COURSE CREDITS: 3   MAX. TIME: 1.5 Hours

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

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1. List the steps to be followed for filtering the digital images in frequency domain. What are the effects that can be seen on the resultant image obtained on applying LPF and HPF on the digital image?

    [5] CO3

2. (a) Draw a model for the image degradation and restoration process.

    (b) List any three noise models and draw their probability density functions.

    [2+3] CO4

3. A binary image contains straight lines oriented horizontally, vertically, at 45°, and at -45°. Give a set of 3X3 masks that can be used to detect 1-pixel breaks in these lines. Assume that the intensities of the lines and background are 1 and 0 respectively.

    [5] CO4

4. What do you understand by linking of edges? Explain how Hough transform can be used for linking of edges.

    [5] CO4

5. (a) Explain how edge detection techniques can be used for image segmentation.

    (b) How global thresholding is used for image segmentation? Write an algorithm to determine the global threshold value for any image.

    [2+3] CO4