Code No. 3285 / S

FACULTY OF INFORMATICS

B.E. 4/4 (IT) I – Semester (Suppl.) Examination, May / June 2017

Sub: Digital Image Processing (Elective – III)

Time: 3 Hours **Max.Marks: 75**

Note: Answer all questions from Part – A and any five questions from Part – B.

PART – A (25 Marks)

1 Define brightness and contrast of an image. [2]

2 Define geometric mean filtering. [3]

3 What is the use of MPEG standard? [2]

4 What do you infer from multi-modal histogram of an image? [3]

5 State the condition to be met by the partitions in region based segmentation. [3]

6 State the principle of directional smoothing. [3]

7 Write the importance of edge detection. [2]

8 Explain about the role of Discrete Cosine Transform role in JPEG image compression. [2]

9 Explain what is the basic concept in the segmentation method by morphological watersheds. [3]

10 Describe the shape numbers of an image. [2]

PART – B (5x10=50)

11 Determine the Discrete Cosine Transform (DCT) for N=8. [10]

12 Discus the image segmentation based on various thresholding techniques. [10]

13 a) Explain the 2D-DCT with its properties. [5]

b) Explain the colour image enhancement. [5]

14 Give the butter-fly diagram of Cooley-Tukey method of computing Discrete Fourier Transform (DFT) of a 8-point data-set. Also explain the role of roots of unity in developing this algorithm known as Fast Fourier Transform (FFT). [10]

15 a) Write notes on region splitting and merging. [5]

b) What is directional derivative and where it is used in image processing? [5]

16 a) How the RGB model is represented using HSI format? Describe the transformation. [5]

b) How do you enhance a monochrome image with equalization of histogram. [5]

17 a) Discuss region growing. [5]

b) Explain how to remove the blur caused in an image due to uniform linear motion. [5]

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