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322751(22)

APR-MAY

B. E. (Seventh Semester) Examination, 2020

(Old Scheme)

(CSE, IT Engg. Branch)

DIGITAL IMAGE PROCESSING

(Elective-II)

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note *: Each unit Part (a) is compulsory. Attempt any* ***two*** *parts from part (b), (c) and (d).*

Unit-I

1. (a) Define image processing. 2

(b) Draw and explain the image formation model in digital image processing. 7

(c) How image enhancement can be done in special domain? Explain it. 7

(d) Explain Canny Edge Detection Method. 7

Unit-II

2. (a) Define frequency domain of image processing. 2

(b) Explain 2D discrete fourier transform and inverse discrete fourier transform of an image. 7

(c) Fast fourier transform useful to reduce processing time in image processing. Justify. 7

(d) Write short notes on : (any **one**) 7

(i) Thresholding

(ii) Region based segmentation

Unit-III

3. (a) What is Dialation and Erosion? 2

(b) What are different logical operations involving in binary image? 7

(c) Explain homomorphic filtering method. 7

(d) Explain region filtering based and motion based segmentation techniques. 7

Unit-IV

4. (a) What do you mean by Image Compression? 2

(b) Explain Huffman coding method for coding redundancy. 7

(c) What is Lossy compression? Explain DCT. 7

(d) Write short notes on : (any **two**) 7

(i) JPEG

(ii) Run length coding

(iii) Video compression

Unit-V

5. (a) What do you mean by boundary descriptors? 2

(b) Explain projective geometry for image representation. 7

(c) Explain correlation based and feature based stereo correspondence. 7

(d) Write short note on optical flow. 7