

R13

Code No: 117CJ

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, April/May - 2018

DIGITAL IMAGE PROCESSING

(Common to ECE, ETM)

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B. Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART- A

(25 Marks)

- 1.a) Define a digital image. [2]
- b) Draw an image for image processing system. [3]
- c) Present a note on smoothing linear filters. [2]
- d) What are the applications of gray level slicing? [3]
- e) Present a note on WEIGHT parameter. [2]
- f) What are the spatial and frequency properties of noise? [3]
- g) What are the applications of image segmentation? [2]
- h) What is meant by watermarking? [3]
- i) Define image compression. [2]
- j) What is meant by error free compression? [3]

PART-B

(50 Marks)

- 2.a) Distinguish between digital image and binary image. [5+5]
 - b) Explain a simple image model. [5+5]
- OR**
- 3.a) Explain the properties of slant transform. [5+5]
 - b) Write short notes on hadamard transform. [5+5]
4. Explain image enhancement by point processing. [10]
- OR**
- 5.a) Explain about Ideal Low Pass Filter(ILPF) in frequency domain. [5+5]
 - b) What is high frequency filtering? [5+5]
- 6.a) Write about component image observation model. [5+5]
 - b) Discuss about Erlang noise. [5+5]
- OR**
7. Discuss about constrained and unconstrained restorations. [10]

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- 8.a) Explain about Hough transform with an example.
b) What is the role of thresholding in segmentation?

[5+5]

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- 9.a) Write short notes on dilation and erosion.
b) Give an overview of digital image watermarking methods.

[5+5]

10. Discuss various image compression models.

[10]

OR

- 11.a) Write a short note on fidelity criterion.
b) Explain Huffman coding technique.

[5+5]

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