

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)

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|-----------|--|-------|
| 2.a) | Distinguish between digital image and binary image. | |
| b) | Explain a simple image model. | [5+5] |
| OR | | |
| 3.a) | Explain the properties of slant transform. | |
| 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. | |
| b) | What is high frequency filtering? | [5+5] |
| 6.a) | Write about component image observation model. | |
| b) | Discuss about Erlang noise. | [5+5] |
| OR | | |
| 7. | Discuss about constrained and unconstrained restorations. | [10] |

- 8.a) Explain about Hough transform with an example. [5+5]
b) What is the role of thresholding in segmentation?

OR

- 9.a) Write short notes on dilation and erosion. [5+5]
b) Give an overview of digital image watermarking methods.

10. Discuss various image compression models. [10]

OR

- 11.a) Write a short note on fidelity criterion. [5+5]
b) Explain Huffman coding technique.

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