

Hall Ticket No:

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Question Paper Code :

**ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCES  
(AUTONOMOUS)**

M.E/M.Tech I-Semester Regular Examinations, November 2015

**Image Processing  
(Computer Science & Technology)**

**Date:**

**Time: 3 hours**

**Max Marks: 60**

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**Answer ONE Question from each Unit**

**All Questions Carry Equal Marks**

**All parts of the question must be answered in one place only**

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**Unit-1**

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| 1. a. Define a Pixel?  | 2M |
| b. List down different fields that use image processing?               | 2M |
| c. Explain about adjacency, connectivity, and neighborhood of a pixel? | 8M |

OR

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| 2. a. Explain about the Image acquisition process?                   | 4M |
| b. What are all the different fundamental steps in Image Processing? | 8M |

**Unit-2**

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| 3. a. What is image negative transform?      | 2M |
| b. Explain about Local Histogram Processing? | 2M |
| c. Explain about Smoothing spatial filters?  | 8M |

OR

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|--|----|
| 4. a. Give a short note on Log transformations | 2M |
| b. What is Convolution in spatial domain?      | 2M |
| c. Discuss about sharpening spatial filters?   | 8M |

**Unit-3**

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|---|----|
| 5. a. What is Fourier's series?                         | 2M |
| b. What is Fourier's theorem?                           | 2M |
| c. List down 2-D discrete Fourier transform properties? | 8M |

OR

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|---|----|
| 6. a. Explain about 2-D convolution theorem?                  | 2M |
| b. Define Band reject filtering frequency domain?             | 2M |
| c. Discuss about Image smoothing filters in frequency domain? | 8M |

**Unit-4**

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|---|----|
| 7. a. Explain erosion and dilation with examples? | 4M |
| b. Discuss any 4 morphological algorithms?        | 8M |

OR

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| 8. a. Explain about Huffman coding and coding redundancy | 4M |
| b. Explain about JPEG compression standard?              | 8M |

**Unit-5**

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|---|----|
| 9. a. Explain about detection of isolated points?     | 4M |
| b. Explain about different edge detection techniques? | 8M |

OR

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|--|----|
| 10. a. Define segmentation?                                      | 2M |
| b. Edge Linking and Boundary detection                           | 2M |
| c. Discuss about different Region Based Segmentation techniques? | 8M |