**14EC704Hall Ticket Number:**

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| **IV/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION** | | | |
| **Jan/Feb, 2021** | **Electronics and Communication Engineering** | | |
| **Seventh Semester** | **Digital Image Processing** | | |
| **Time:** Three Hours | | **Maximum :** 60 Marks | |
| *Answer ALL Questions from PART-A.* | | | (1X12 = 12 Marks) |
| *Answer* ***ANY FOUR*** *questions from PART-B.* | | | (4X12=48 Marks) |
| **Part - A** | | | |

**1.** Answer all questions (1X12=12 Marks)

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| a | What is meant by digital image processing |
| b | What is meant by Weber ratio |
| c | Define Sampling and Quantization |
| d | What is city block distance |
| e | Write general form of log transformation? |
| f | What are the steps involved in unsharp masking? |
| g | Write Different types of data redundancies? |
| h | Define data compression |
| i | List fundamental operations of morphological process? |
| j | Write the run length code for 1100001111 |
| k | List the different types of noises |
| l | Define Erosion and Dilation. |

**Part - B**

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| 2.a | With neat sketch explain components in Image Processing? | 6M |
| 2.b | Explain various measures used for calculating distance between pixels? | 6M |

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| 3.a | Discuss the elements of human visual perception with neat diagram. | 6M |
| 3.b | Explain the origin of Digital Image Processing | 6M |

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| 4.a | What is meant by Histogram of an image? and explain about histogram specification | 6M |
| 4.b | How Gray level transformation helps in contrast enhancement? Discus | 6M |

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| 5.a | Explain the image smoothing in Frequency domain using ideal low pass filter | 6M |
| 5.b | Write the some of the properties of the 2D discrete Fourier transform | 6M |

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| 6.a | Discuss the detail about various color models available in color image processing | 6M |
| 6.b | Name different types of estimating the degradation function for use in image restoration and explain in detail estimation by modeling. | 6M |

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| 7.a | Explain the steps involved in Wiener filtering used for image restoration | 6M |
| 7.b | Explain about inter pixel redundancy and psychovisual reducdancy | 6M |

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| 8.a | Explain how HIT-or-MISS transformation is used for finding local pattern pixels? | 6M |
| 8.b | Explain about lossy and loss less image compression | 6M |

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| 9.a | What is meant by Morphology? Explain some basic Morphological Systems? | 6M |
| 9.b | Explain about image compression model with the help of a block diagram | 6M |

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