**[BCE7518]**

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|  | Pimpri Chinchwad Education Trust's **Pimpri Chinchwad College of Engineering** An Autonomous Institute (Permanently affiliated to Savitribai Phule Pune University) | **SEMESTER - VII** |

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| **Summative Assessment Examination** |

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| Final Year B. Tech. (Computer Engineering) |

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| Computer Vision [Professional Elective Course-6] |

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| [BCE7518] |

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| Even Semester (2024-25) |

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| Total No. of Questions-5 | [Time: 2 Hr] | [Max. Marks: 60] |
| Total No. of Printed Pages-01 |  |  |

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| **PRN** |  |  |  |  |  |  |  |  |  |  |

**Instructions:**

IMP: Verify that you have received a question paper with the correct course, code, branch, etc.

i. Q.1 is Compulsory. Attempt Q.2 or Q.3, Q.4 or Q.5

ii. Assume suitable data wherever necessary.

iii. Neat labelled diagrams must be drawn wherever necessary.

iv. The figure to the right indicates full marks.

v. Use of a non-programmable calculator is allowed.

**Q1: Solve any one**

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| **Q. No.** | **Question** | **CO** | **Marks** |
| A | Apply the process of converting a captured image into a binary image within the field of computer vision. | CO1 | 5 |
| B | Demonstrate how to convert an image from RGB to HSV color space. | CO1 | 5 |

**Q2: Solve any one**

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| **Q. No.** | **Question** | **CO** | **Marks** |
| A | Analyze Corner detection is the primary function of the Harris Corner Detector in image processing? | CO2 | 5 |
| B | Apply 3D vision algorithms to reconstruct a 3D scene from multiple 2D images. How do you handle depth estimation in the reconstruction? | CO2 | 5 |

**Q3: Solve any three**

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| **Q. No.** | **Question** | **CO** | **Marks** |
| A | Using Handwritten character recognition use case elaborate the concept of convolutional neural networks (CNNs) with neat diagrams also enlist the advantages of CNN in image processing in detail. | CO3 | 5 |
| B | Using Biometric authentication use case elaborate the concept of convolutional neural networks (CNNs) with neat diagrams also enlist the advantages of CNN in image processing in detail. | CO3 | 5 |
| C | Using Recommender engines use case elaborate the concept of convolutional neural networks (CNNs) with neat diagrams also enlist the advantages of CNN in image processing in detail. | CO3 | 5 |
| D | Using Medical Diagnosis use case elaborate the concept of convolutional neural networks (CNNs) with neat diagrams also enlist the advantages of CNN in image processing in detail. | CO3 | 5 |

**Q4: Solve any three**

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| **Q. No.** | **Question** | **CO** | **Marks** |
| A | What are the Use Cases of Convolutional Neural Network? | CO4 | 5 |
| B | How do CNNs deal with overfitting? | CO4 | 5 |
| C | Evaluate the size of a feature map, given that the image size is 32x32, filter size is 5x5, stride is 1, and no padding. | CO4 | 5 |
| D | What are the different types of Convolutional Neural Network (CNN) Architectures? | CO4 | 5 |