

Name :
Reg No :

A

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
07 THRISSUR CLUSTER**

THIRD SEMESTER M.TECH. DEGREE EXAMINATION DEC 2017

Computer Science & Engineering

Computer Science & Engineering

07CS 7105 COMPUTER VISION

Time : 3 hours

Max.Marks: 60

Answer all six questions. Part 'a' of each question is compulsory.

Answer either part 'b' or part 'c' of each question

Q.no.	Module 1	Marks
1a	Compare and contrast Arithmetic coding and Huffman coding.	4

Answer b or c

- | | | |
|----------|--|----------|
| b | Various types of noises like salt and pepper noise and Gaussian noise causes immense corruption in digital images. List out and explain the various filters for these noises, which operate in the spatial domain. | 5 |
| c | Discuss the role of various camera models in image formation. | 5 |

Q.no.	Module 2	Marks
2a	Explain the technique of SIFT.	4

Answer b or c

- | | | |
|----------|--|----------|
| b | Feature extraction plays a crucial role in any object recognition system. Suggest an object recognition system with an efficient and robust feature extraction method. | 5 |
| c | Edge detection process makes use of various edge detection operators. Suggest any two edge detection operators and their advantages. | 5 |

Q.no.	Module 3	Marks
3a	Write notes on image warping and stitching.	4

Answer b or c

- | | | |
|----------|--|----------|
| b | Design a multi-object recognition system using the concept of support vector machine. | 5 |
| c | How is High-dynamic-range imaging (HDRI) technique used in imaging and photography to reproduce a greater dynamic range of luminosity? | 5 |

Q.no.	Module 4	Marks
4a	Define optical flow. Mention its applications.	4

Answer b or c

- | | | |
|----------|---|----------|
| b | Two cameras take a picture of the same scene from different points of view. How can the relations between the two resulting views be described using epipolar geometry? | 5 |
| c | How camera calibration can be used in estimating the parameters of a lens and image sensor of an image or video camera. | 5 |

Q.no.	Module 5	Marks
5a	Write notes on high level computer vision.	5

Answer b or c

- | | | |
|----------|---|----------|
| b | Mention the approach used for the representation of text as an unordered collection of words, and how can this be used to classify the text belonging to two different classes. | 7 |
| c | Describe the context of instance recognition from local features. | 7 |

Q.no.	Module 6	Marks
6a	Explain the model based pattern recognition technique.	5

Answer b or c

- | | | |
|----------|--|----------|
| b | Suggest any one statistical pattern recognition technique for recognising English letters | 7 |
| c | Suggest an efficient face detection system that classifies maximum number of faces present in a scene as true positives. | 7 |