

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

<b>Q.no.</b>	<b>Module 1</b>	<b>Marks</b>
<b>1a</b>	Compare and contrast LZW coding and Arithmetic coding.	<b>4</b>

**Answer b or c**

- |          |   |          |
|----------|---|----------|
| <b>b</b> | Usually, image processing industry needs immense clarity in images and minimum noise. Suggest a technique for filtering, which operates in the frequency domain that also enhances the edges. | <b>5</b> |
| <b>c</b> | Salt and pepper noise causes corruption in digital images. Specify and explain a suitable filter in spatial domain that efficiently removes salt and pepper noise.                            | <b>5</b> |

<b>Q.no.</b>	<b>Module 2</b>	<b>Marks</b>
<b>2a</b>	Compare Robertz and Prewitt Edge detection operators.	<b>4</b>

**Answer b or c**

- |          |   |          |
|----------|---|----------|
| <b>b</b> | Discuss the object recognition system using SURF.         | <b>5</b> |
| <b>c</b> | How can lines be detected using Hough transform? Explain. | <b>5</b> |

<b>Q.no.</b>	<b>Module 3</b>	<b>Marks</b>
<b>3a</b>	Brief about image warping and compositing.	<b>4</b>

**Answer b or c**

- |          |  |          |
|----------|--|----------|
| <b>b</b> | Design a face recognition system using Support Vector Machine. | <b>5</b> |
| <b>c</b> | Explain in detail about any two object recognition methods.    | <b>5</b> |

<b>Q.no.</b>	<b>Module 4</b>	<b>Marks</b>
<b>4a</b>	Write short note on shape from shading technique.	<b>4</b>

**Answer b or c**

- |          |   |          |
|----------|---|----------|
| <b>b</b> | Explain the fundamental matrix for the geometry of two cameras.   | <b>5</b> |
| <b>c</b> | Describe the method used in computer vision to characterize and quantify the motion of objects in a video stream. | <b>5</b> |

<b>Q.no.</b>	<b>Module 5</b>	<b>Marks</b>
<b>5a</b>	Describe about the method of Instance Recognition from Local Features.	<b>5</b>

**Answer b or c**

- |          |   |          |
|----------|---|----------|
| <b>b</b> | Elaborate the method of Scene recognition with bag of words representation. | <b>7</b> |
| <b>c</b> | Explain in detail about Energy minimisation segmentation.                   | <b>7</b> |

<b>Q.no.</b>	<b>Module 6</b>	<b>Marks</b>
<b>6a</b>	Explain the method which makes use of statistical techniques for analysing data measurements in order to extract information and make justified decisions.	<b>5</b>

**Answer b or c**

- |          |  |          |
|----------|--|----------|
| <b>b</b> | Compare and contrast Appearance based Recognition and Model based Recognition methods  | <b>7</b> |
| <b>c</b> | Write an algorithm to determine whether there are any faces in the given image and, if present or not. Discuss each step in that algorithm | <b>7</b> |