Roll No .....

MCA - 505(B)

MCA V Semester

Examination, December 2014

Computer Vision and Digital Image Processing

(Elective - III)

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit - I

1. a) Define the term computer vision.
   b) Define the term Image processing.
   c) Write the brief notes on display and recording device?
   d) Explain computer vision and its application in brief.

OR

Write the fundamental steps of digital Image Processing.

Unit - II

2. a) What is meant by sampling and quantization?
   b) What is the need for transforms? What are the advantages of transforms.
   c) What is Image Transformation? Write the various types of Image transforms.
   d) Explain the following terms:
      i) Image geometry ii) Image smoothing

OR

Write the differentiate between Fourier transformation and discrete Fourier transformation.

Unit - III

3. a) What do you mean by histogram processing?
   b) What is the difference between image enhancement and image restoration?
   c) Write a brief notes on image averaging and image subtraction.
   d) What do you understand by histogram equalization and Histogram matching? How do these process enhance the image?

OR

Explain low pass filtering and high pass filtering in brief.

Unit - IV

4. a) What is meant by edge linking?
   b) Why and how are edges combined?
   c) Define the terms segmentation? What are the different ways in which segmentation algorithms can be classified?
   d) Explain how the edge segmentation algorithms are evaluated.

OR

Explain in detail the stages of edge detection algorithms. How are they present in edge operators?

Unit - V

5. a) What are the characteristics of a good features?
   b) Define the terms optic flow.
   c) Write a brief notes on motion tracking.
   d) Differentiate between region and boundary. Describe regional descriptors.

OR

What is the advantages to use boundary descriptors? Describe the process of description using boundary descriptors.

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