CBCS SCHEME

15MT754

Seventh Semester B.E. Degree Examination, Feb./Mar. 2022
Digital Image Processing

Time: 3 hrs.   Max. Marks: 80

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1	a.	With a neat sketch, explain fundamental steps in digital image processing.	(08 Marks)
	b.	With a neat sketch, explain human visual system.	(08 Marks)

OR

2	a.	Discuss about Brightness Adaptation and Discrimination.	(08 Marks)
	b.	With a neat sketch, explain components of image processing system.	(08 Marks)

Module-2

3	a.	With a neat sketch, explain image sensing and Acquisition system.	(08 Marks)
	b.	Illustrate Image sampling and Quantization considering a continuous image f.	(08 Marks)

OR

4	a.	Discuss the following relationship between Pixels : i) Neighbors ii) Adjacency iii) Connectivity.	(08 Marks)
	b.	Discuss different distance measures used in digital image processing.	(08 Marks)

Module-3

5	a.	What is the need for Transformation? List and explain the properties of unitary transform.	(08 Marks)
	b.	Compute discrete cosine transform matrix for N = 4.	(08 Marks)

OR

6	a.	State and prove any two properties of 2D Discrete Fourier Transform.	(08 Marks)
	b.	Generate Haar Basis for N = 2	(08 Marks)

Module-4

7	a.	Discuss about Basic intensity transformation function.	(08 Marks)
	b.	Write a short notes on Histogram equalization.	(08 Marks)

OR

8	a.	Discuss about homomorphic filtering.	(08 Marks)
	b.	Discuss about Image smoothing using frequency domain filters.	(08 Marks)

Module-5

9	a.	Write a short notes on Image Degradation /Restoration process.	(06 Marks)
	b.	Discuss about RGB color model.	(10 Marks)

OR

10	a.	Discuss about different Noise probability, Density Functions with relevant sketch and expression.	(08 Marks)
	b.	Discuss about different mean filters.	(08 Marks)

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