B.E.Eighth Semester (Computer Technology) (C.B.S.)
Elective - IV : Digital Image Processing

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Notes :   1.   All questions carry marks as indicated.
2.   Solve Question 1 OR Questions No. 2.
3.   Solve Question 3 OR Questions No. 4.
4.   Solve Question 5 OR Questions No. 6.
5.   Solve Question 7 OR Questions No. 8.
6.   Solve Question 9 OR Questions No. 10.
7.   Solve Question 11 OR Questions No. 12.
8.   Due credit will be given to neatness and adequate dimensions.
9.   Illustrate your answers whenever necessary with the help of neat sketches.

1.   a)   Explain the fundamental steps in image processing.   **7**

b)   Describe sampling and Quantization with its need.   **6**

OR

2.   a)   Explain Basic relationship between Pixels.   **6**

b)   Discuss zooming and shrinking image.   **7**

3.   a)   Explain Histrogram Equalization and also write down its advantages.   **7**

b)   Explain the concept of spatial filtering.   **7**

OR

4.   a)   Write notes on :
1)   Smoothing spatial filters.   **4**
2)   Sharpening spatial filters.   **4**

b)   Describe in detail, the following gray level transformations –
1)   Digital Negative.   **3**
2)   Log-transformation.   **3**

5.   a)   Explain Homomorphic filtering in detail.   **7**

b)   Explain correspondence between filtering in the spatial and frequency domain.   **6**

OR

6.   a)   Write a short notes on Image Enhancement in frequency domain.   **7**

b)   What is smoothing frequency domain filters and sharpening frequency domain filters.   **6**
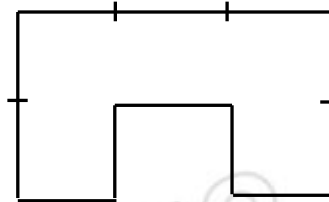
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7.	a)	Explain Image compression and its need.	**6**
	b)	Write notes on –	
		1) Lossy compression.	**4**
		2) Error-free compression.	**4**

OR

8.	a)	Explain in detail. Morphological Processing.	**8**
	b)	Describe –	
		1) Dilation and Errosion.	**2**
		2) Opening and closing.	**2**
		3) Boundry Extraction and Region filling.	**2**
9.	a)	Explain the Region-oriented segmentation of digital Images in detail.	**7**
	b)	Write short notes on –	
		1) Line Detection.	**2**
		2) Edge Detection.	**2**
		3) Point Detection.	**2**

OR

10.	a)	Explain the Image segmentation with its significance.	**7**
	b)	Discuss threshold region based technique.	**6**
11.	a)	What is order of shape number for the given figure below? Also obtain the shape number?	**7**

	b)	Write a short notes on topological Descriptors.	**6**

OR

12.	a)	Explain signatures and skeleton of region.	**6**
	b)	Write a short notes on :	
		1) Polygonal approximation.	**2**
		2) Regional descriptor.	**2**
		3) JPEG Image file format.	**3**

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