R18

Code No: 155BT

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, March - 2024

IMAGE PROCESSING

(Common to CSE, IT, CSE(DS))

Time: 3 Hours **Max. Marks: 75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART - A

(25 Marks)

1.a)	What is the need of scanner in digital image processing?	[2]
b)	What is the difference between SVD and KL transform?	[3]
c)	What do you mean by enhancement in spatial domain?	[2]
d)	What is enhancement in remote sensing?	[3]
e)	What is the approach to restoration in image processing?	[2]
f)	List the four approaches to restoration.	[3]
g)	What is line detection in image segmentation?	[2]
h)	What is image segmentation and detection?	[3]
i)	What is the fidelity criteria in image compression?	[2]
j)	Explain the Lossy Compression.	[3]

PART - B

(50 Marks)

2.a)	Discus the relation between pixels.	
b)	Describe the Digital Camera.	[5+5]
	OR	
3.	Explain the DCT, KLT and SVD.	[10]
4.a)	Difference between spatial and temporal filtering.	
b)	Discuss any one image sharpening technique.	[5+5]
	OR	
5.a)	Explain the Enhancement in Frequency Domain.	
b)	Give a brief note on Spatial Filtering.	[5+5]
6.a)	Explain the Algebraic Approach to Restoration.	
b)	Discuss the Interactive Restoration.	[5+5]
	OR	
7.	Explain the Constrained Least Squares Restoration in detail.	[10]

8.a) Discuss the basic principles of image segmentation.
b) What are discontinuities in an image? Explain. [6+4]

OR

9.a) Explain the Edge Linking and Boundary Detection.
b) Discuss the Region Oriented Segmentation. [5+5]

10.a) Compare Lossy and Lossless image compression.
b) Explain the Source Encoder and Decoder. [4+6]

OR

11. Describe the Error Free Compression. [10]

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