Code No: 155BT **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, January/February - 2023
IMAGE PROCESSING
(Common to CSE, IT, CSE(AIML), 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 'digital image processing'?	[2]
b)	List the properties of 2-D DFT method.	[3]
c)	What are gamma transformations?	[2]
d)	What is special correlation?	[3]
e)	State the expression for geometric mean filter.	[2]
f)	Draw the model of image degradation-restoration process.	[3]
g)	List the advantages of canny edge detector.	[2]
h)	Write the mask for sobel edge detector and prewitt edge detector prewitt.	[3]
i)	List different types of Redundancies.	[2]
j)	Summarize noiseless coding theorem.	[3]

PART – B

(50 Marks)

2. Illustrate 'Gray level digital image processing' in detail. [10]

OR

3. Discuss the 'Origins of digital image processing'. [10]

4. Outline the mechanism for 'Spatial filtering' in detail. [10]

OR

5. Write the details about 'Histogram Processing' for image enhancement with example. [10]

6. Describe the concept of 'Algebraic approach to restoration' with example. [10]

OR

7. Compare and contrast 'Enhancement and Restoration'. [10]

8. "The image threshold enjoys a central position in allocation of image segmentation" Prove the statement with suitable case study. [10]

OR

9. Illustrate "Region growing" with example. [10]

10.a) Discuss 'Fidelity criterion' in image compression.
b) Draw and explain the functional block diagram for image compression system. [5+5]

OR

11. Elaborate the techniques for "Lossy compression". [10]

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