

Code No: R204104B

R20

SET - 1

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM**

**IV B. Tech I Semester Advanced Supplementary Examinations March 2025**

**DIGITAL IMAGE PROCESSING**

(Electronics & Communication Engineering)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from Each unit

All Questions Carry Equal Marks

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**UNIT-I**

1. a) Explain the properties of the 2-D Discrete Fourier transform. [7M]  
b) Write about Haar Transform in detail? [7M]

(OR)

2. a) Discuss about Discrete Cosine transform. [7M]  
b) Compare different image transforms? [7M]

**UNIT-II**

3. What are the fundamentals of spatial filtering, demonstrate smoothing and sharpening of spatial filters in detail? [14M]

(OR)

4. a) Discuss on Combining spatial enhancement methods. [7M]  
b) Write down Basics of filtering in the frequency domain? [7M]

**UNIT-III**

5. a) Discuss about Minimum mean square error (Wiener) filtering. [7M]  
b) Demonstrate on constrained least squares filtering? [7M]

(OR)

6. a) Explain about restoration in the presence of noise only-Spatial Filtering. [7M]  
b) Describe Minimum mean square error (Wiener) filtering? [7M]

**UNIT-IV**

7. a) Discuss about Image pyramids. [7M]  
b) Explain about subband coding. [7M]

(OR)

8. a) Demonstrate about Compression method Symbol-Based coding? [7M]  
b) Analyze Compression method Bit- Plane coding? [7M]

**UNIT-V**

9. a) Write basics of full color image processing? [7M]  
b) Explain about Image segmentation based on color. [7M]

(OR)

10. a) Discuss about noise in color images. [7M]  
b) Explain about color image compression. [7M]

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