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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech IV Year I Semester Supplementary Examinations November-2020

DIGITAL IMAGE PROCESSING

(Electronics & Communication Engineering)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

UNIT-I

- 1 a Discuss in detail about fundamental steps in DIP. 7M
b Explain about neighbors, adjacency of pixels? 5M

OR

- 2 a Describe the concept of image sensing and acquisition? 6M
b What is meant by illumination and reflectance and represent how the digital image is formed? 6M

UNIT-II

- 3 a Explain unitary transform and its properties 6M
b Find the Hadamard basis function for N=8. 6M

OR

- 4 a Explain any two properties of Discrete Fourier transforms? 6M
b Derive an expression for Hartley transform. 6M

UNIT-III

- 5 a Explain following image enhancement techniques 7M
i) Gray level slicing ii) bit plane slicing
b Show that histogram equalization method gives uniform histogram for continuous images. 5M

OR

- 6 a Explain about various spatial filters for image smoothing operations. 7M
b Explain how image enhancement is done in frequency domain. 5M

UNIT-IV

- 7 a With the help of block diagram explain about degradation model. 6M
b With an example explain how derivative operators are useful for edge detection 6M

OR

- 8 a Describe the procedure for image segmentation based on region splitting & merging with relevant examples. 7M
b What are the applications of image segmentation? 5M

UNIT-V

- 9 a Describe about 7M
i) Run length coding ii) bit plane coding
b Explain about objective and subjective image fidelity criterion. 5M

OR

- 10 a What is the need for image compression? 5M
b Discuss the transform domain compression with the help of block diagram. 7M

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