Code No: 09A70407 **R09**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, November - 2013

Digital Image Processing

(Common to ECE, ETM, ECM)

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

Answer any Five Questions

All Questions Carry Equal Marks

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1.a) Discuss about the adjacencies available among pixels.
b) Derive the kernel for N=4 for Walsh transform. [5+10]

2.a) What is point processing? Explain how it improves image enhancement?
b) Explain histogram specification method for image enhancement. [15]

3.a) Differentiate between Ideal and butter worth frequency domain filters.
b) Explain the image sharpening using butter worth filters and draw its frequency response plots. [5+10]

4.a) Compare inverse filtering and least mean squares filtering.
b) Discuss about least mean squares filtering and derive its transfer function. [5+10]

5.a) What is difference between thresholding based and region based segmentation.
b) Describe the region splitting and merging algorithm. [5+10]

6.a) Define the coding, inter pixel and psychovisual redundancies.
b) Obtain the tag using arithmetic coding to transmit the word 'INDIA'. [5+10]

7.a) Compare continuous and discrete wavelet transforms.
b) List out any five continuous wave-lets and their functions. [5+10]

8.a) Explain OR, AND, NOT and XOR logical operations.
b) The input picture and structuring element is shown below. Perform closing operation. [5+10]

0	1	1	0
1	0	0	1
1	0	0	1
0	1	1	0

The input Picture

0	1	0
1	1	1
0	1	0

Structuring element

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