23/6/22(M)
8th Sem.

Exam.Code:0926
Sub. Code: 6770

2062
B.E. (Information Technology)
Eighth Semester
IT-801: Digital Image Processing

Time allowed: 3 Hours Max. Marks: 50

NOTE: *Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.*

x-x-x

I. Attempt the following:-

a) Explain Lossy compression techniques.

b) What are color models? Explain any two color models.

c) What is the advantage of using homomorphism filtering?

d) What is the role of fourier transform in image processing?

e) Define patterns and patterns classes. (5x2)

UNIT - I

II. a) Explain image restoration techniques using inverse filtering.

b) Describe histogram equalization technique for image enhancement. (2x5)

III. a) What are color models? Describe in brief RGB and HSI color models.

b) With the help of block diagram, describe in detail fundamentals steps in image processing. (2x5)

IV. a) Explain in detail about frequency domain filters for image enhancement.

b) Explain the image degradation and restoration process. What are the various noise models? (2x5)

UNIT - II

V. a) What is image segmentation? Explain difference between first order and second order edge detection techniques.

b) What is coding scheme in JPEG? Explain it. (2x5)

P.T.O.

VI. Write short notes on the following:-

a) Coding redundancy

b) JPEG compression

c) Object recognition

d) Boundary and regional descriptors (10)

VII. a) Construct the Huffman code for the word 'COMMITTEE'. Compute the average length, Entropy and efficiency of the code.

b) Define Hough transform with example. (2x5)

x-x-x