Duration: 3hrs **Max Marks:80**

N.B. : (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

Q.1 Write short notes on 20

A Arithmetic Coding

B FFT

C Digital video Formats

D Representation of Digital Image

Q.2 A What do you mean by Neighbourhood Processing? Explain with an example. 10

B Explain in detail Hadamard Transform 10

Q.3 A Explain Histogram Equalization. Equalize the following histogram. Show the table for Histogram equalization. Plot the Input histogram and output histogram for the 3bpp image given below: 10

7	3	2	1	2
7	3	4	4	6
7	3	4	4	3
4	1	4	5	4
5	5	4	5	4
2	5	5	5	2
7	2	4	5	6
7	2	4	6	5
7	5	4	6	2
2	3	4	2	3

B What do you understand by Image Compression? Can Vector Quantization technique be used for Compressing images if Yes How? If No Why? 10

Q.4	A	Explain segmentation based on Discontinuities	10
	B	Explain DFT and IDFT in detail	10
Q.5	A	Explain in detail Contrast Stretching and Dynamic Range Compression Technique	10
	B	Explain with an example Run Length Coding	10
Q.6		Write short notes on	20
	A	Sampling and Quantization	
	B	Unitary Transforms	
	C	Split and Merge	
	D	Smoothing and Sharpening Filters	

****