Q. P. Code: 26107

(3 Hours)   80 Marks

N.B.   1. Question No.1 is Compulsory
        2. Attempt any THREE questions out of remaining.
        3. Assume suitable data wherever required

Q.1.   Answer the following   4*5=20M
  a.   Explain Fidelity Criteria
  b.   Explain Morphological operations Erosion and Dilation
  c.   Explain Zero memory operations
  d.   What is unitary Matrix

Q.2.a   What are the different types of redundancies in an image? Explain Run   10 M
        Length Encoding with appropriate example. What are its drawbacks ?

Q.2.b. Find the arithmetic codeword for the message: INDIA   10 M

Q.3.a   Using the Butterfly diagram , compute Hadamard transform for   10 M
        X(n)={ 1,2,3,4,1,2,1,2}

Q.3.b   Find the DFT of the following image   10 M

0	1	2	1
1	2	3	2
2	3	4	3
1	2	3	2

Q.4.a   Perform Histogram Equalization and Draw new equalized histogram of the   10 M
        following image data

Grey levels	0	1	2	3	4	5	6	7
No of pixels	400	700	1350	2400	3000	1500	650	0

Q.4.b. Explain segmentation? Explain the following methods of image   10 M
        segmentation with suitable Example
            1) Region Growing
            2) Split and Merge

Q.5.a   Given   10 M

10	44	16
10	14	48
11	10	22

Find 3 bit IGS coded image and calculate compression Factor , BPP and MSE

Q.5. b   Explain Hough Transform with suitable example   10 M

Q.6   Write short notes on   5*4=20M

1) Holomorphic Filtering
2) Thinning with Example
3) Moments with Example
4) Color models

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