Q.P. Code :22923

[Time: Three Hours]   [Marks: 80]

Please check whether you have got the right question paper.

N.B: 1) Question 1 is compulsory.
        2) Answer any 3 from remaining 5 Questions.
        3) Figures to the right indicate full marks.
        4) Assume suitable data wherever necessary

Q 1 (a)   Draw the JPEG Encoder and describe the role of each block   10

Q 1 (b)   Explain the types of gray level transformation used for image enhancement   10

Q2 (a)   Explain Homomorphic filtering in detail.   10

Q2 (b)   What is a Median filter, maximum filter and minimum filter ?When is the   10
          median filter not effective in noise removal

Q3 (a)   What is histogram? Explain histogram equalization taking a pseudo image   10
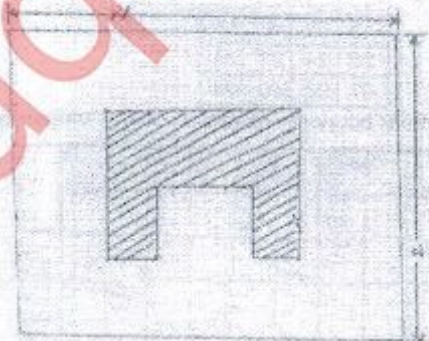
Q3 (b)   Find the DFT of the image   10

$f(x,y)=$

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

Show the Magnitude and phase spectra
OR
Find the DCT of the above image

Q4 (a)   Segment the image shown by using split and merge procedure. Let p (Ri) = TRUE if   10
          all pixels in Ri have the same gray level. Show the quadtree corresponding to your
          segmentation.

Q4 (b) Show that a median filter is a non linear filter 10

Q5 (a) Explain 4, 8 and m connectivity between pixels 10

Q5 (b) Explain euclidean,D4, D8 and Dm distance by taking a suitable example

10

Q6 (a) How is line detected? Explain using the operators and also demonstrate by 10
taking a set of points how edge linking can be done.

Q6 (b) Consider an 8- pixel line of gray-scale data, {12,10,13,13,10,13,57,54}, 10
which has been uniformly quantized with 6-bit accuracy. Construct its 3-bit
IGS code.

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