Sl. No.

C7-R4 : DIGITAL IMAGE PROCESSING AND COMPUTER VISION

NOTE :
1.   **Answer question 1 and any FOUR questions from 2 to 7.**
2.   **Parts of the same question should be answered together and in the same sequence.**

Time : 3 Hours   **Total Marks : 100**

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1.   (a)   What is a Digital Image Processing ? State the main advantages of the digital image processing.

(b)   What is dpi ? How does it change image quality if dpi is altered ?

(c)   What is inverse filtering ?

(d)   What is colour slicing ? Give the basic formulation.

(e)   Give four properties of two-dimensional DFT.

(f)   Give the steps for Huffman coding.

(g)   Define discrete wavelet transform.   **(7x4)**

2.   (a)   Explain X-Rays imaging and imaging in Ultraviolet band.

(b)   What do you mean by Image Acquisition ? Describe image acquisition using single sensor.

(c)   Explain binocular imaging system in brief.   **(6+6+6)**

3.   (a)   Explain HIS colour Model.

(b)   Explain briefly Sub-band Coding.

(c)   What is Run length encoding ? Explain it with the help of example.   **(6+6+6)**

4.   (a)   State ambiguity(ies) in motion estimation.

(b)   Explain Hit or Miss Transformation.   **(8+10)**

5.   (a)   What is an active contour model ? How contours are represented using this model ?

(b)   Explain the edge linking procedures.   **(10+8)**

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6. (a) Explain Rayleih Noise and Exponential Noise using suitable equations.

(b) What do you mean by multi resolution analysis ? Give a function used for multi resolution analysis. **(9+9)**

7. (a) Differentiate between lossless and lossy compression.

(b) Explain un-sharp masking and high boost filtering.

(c) Explain about basic adaptive thresholding process used in image segmentation.

(6+6+6)

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