Printed Pages : 2

EBM-701

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 101704

Roll No.

B. Tech.

(SEM. VII) (ODD SEM.) THEORY EXAMINATION, 2014-15

BIOMEDICAL IMAGE PROCESSING

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

1   (a)   Explain light, luminance, brightness and contrast.   **10**
            Discuss Mach band effect.

     (b)   State and prove sampling theorem related to   **10**
            image processing.

2   (a)   Perform the histogram equalization of the image.   **10**

$$\begin{vmatrix} 4 & 4 & 4 & 4 & 4 \\ 3 & 4 & 5 & 4 & 3 \\ 3 & 5 & 5 & 5 & 3 \\ 3 & 4 & 5 & 4 & 3 \\ 4 & 4 & 4 & 4 & 4 \end{vmatrix}$$

(b)   What are the various smoothing technique   **10**
      available in image enhancement? Explain in brief.

3   a.   What is DST? Explain properties of DST   **10**
         with its application.

    b.   What are the properties of Hadamard Transform?   **10**
         Find Hadamard matrix H_3.

4   a.   What do you mean by image segmentation?   **10**
         Explain different image segmentation technique.

    b.   Explain Hough Transform with suitable example.   **10**

5   What are the applications of MATLAB for digital   **10**
    image processing?

6   Write short notes : (any two)   **5×2=10**
    (a)   Clipping and thresholding
    (b)   RGB color
    (c)   Histogram specification.

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