

Internal Assessment Test - III

Sub:	Digital Image Processing						Code:	10EC763	
Date:	20/ 11 / 2017	Duration:	90 mins	Max Marks:	50	Sem:	7th	Branch:	ECE (B)

Answer Any FIVE FULL Questions

	Marks	OBE																			
		CO	RBT																		
1. Perform histogram equalization of the image whose pixel intensity distribution is shown in the table below and infer the results. Draw the histogram of image before and after equalization. [10]	[10]	CO2	L4																		
<table border="1" style="width: 100%; text-align: center;"> <tr> <td>Gray level</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> </tr> <tr> <td>Number of pixels</td> <td>790</td> <td>1023</td> <td>850</td> <td>656</td> <td>329</td> <td>245</td> <td>122</td> <td>81</td> </tr> </table>				Gray level	0	1	2	3	4	5	6	7	Number of pixels	790	1023	850	656	329	245	122	81
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2. Explain homomorphic filters in image enhancement with neat block diagram. List the advantages. [10]	[10]	CO4	L4																		
3.(a) Discuss any four properties of two dimensional Fourier transforms. [07]	[07]	CO3	L2																		
(b) What are basis vectors? [03]	[03]	CO3	L1																		
4. Explain the smoothing of images in frequency domain using: (i) ideal low pass filter (ii) Butterworth low pass filter [10]	[10]	CO4	L3																		

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5. What is the importance of image enhancement in image processing? Explain in brief any two point processing techniques implemented in image processing. [10]
6. (a) Briefly explain how arithmetic and logic operations are used for image enhancement. [06]
- (b) Explain high boost filtering. [04]
7. Explain a filtering approach for simultaneous dynamic range compression and contrast enhancement. [10]
8. For the given orthogonal matrix A and image u, obtain the transformed image and basis images: [10]

$$A = \frac{1}{\sqrt{2}} \begin{bmatrix} 1 & 1 \\ 1 & -1 \end{bmatrix} \quad u = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$$

CO6	L2
CO4	L5
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