1.State and explain the 2D sampling theorem .(4)

2. Define the terms brightness, contrast, hue and saturation with respect to a digital image.

3. State and prove the convolution property of 2D DFT.(2)

4. Compute the 2D DFT of matrix x=4 3 6 4(4)

5. Find the 4 order Hadamard Transform for the following image segment: 1 2 3 2 2 3 4 3 1 2 3 2 2 1 2 1(5)

6. Differentiate between ideal low pass and high pass filter in frequency domain.(4)

7. Explain the various sharpening filters used in spatial domain.(5)

8. Write short note on Prewitt, Robert’s and Sobel edge detectors(5)

9 What is digital image ? Explain the fundamental steps of digital image processing.(5)

10.Define wavelet function?(2)

11. Define pattern. Explain the block diagram of a pattern recognition system with an example.

1. 12. What is Discrete Cosine Transform? Discuss the properties of Hadamard transform. [1+4]
2. What is a discrete Fourier transform. Explain the properties of Fourier transform.(5)
3. Write equations for obtaining 2D forward and invers DFT Give the meaning of each variable in the equations.(5)
4. Explain low pass filtering in frequency domain(5)
5. What is bit plane slicing ? Mention any one of its application .(5)