Assignment - I

1. Explain in detail the region split and merge techniques for image segmentation with suitable example.
2. What do you mean by image enhancement? Explain the operation of Power law (Gamma) transformation with example.
3. Define Digital image. Explain steps involves in digital image processing with diagram.
4. Explain the term Contrast Stretching with example.
5. What is a gradient filter? Explain the Sobel gradient filter in detail along with its algorithm for implementation.
6. Compute the histogram equalization of the given data.

Gray level	0	1	2	3	4	5	6	7
No. of pixel	20	40	55	45	40	70	25	80

7. Explain why FFT is better than DFT with example.
8. How dilation and erosion are applied in region filling and boundary extraction
9. Find the Inverse DFT (IDFT) of given function using DIT-IFFT f(x) = {10, -2+2j, -2, -2-2j}.
10. Explain Global, local, and Adaptive thresholding in segmentation
11. Explain opening and closing morphological operations in brief
12. Define digital image. How do you represent a digital image in computer?
13. What do you mean by image enhancement? Explain the operation of negative transformation with example.

14. What is frequency domain filter? Explain different types of lowpass filters.
15. Explain the Bit plane slicing technique for image enhancement.
16. Explain sampling and quantization.
17. Find DFT of given function using DIT-FFT. F(x) = {1, 2, 3, 4}.
18. What do you mean by image enhancement? What is Histogram Modeling? Explain with example.
19. Define digital image. How do you represent a digital image in computer?
20. What is zooming? Explain the process of zooming by interpolation method.
21. Explain how you can convert an analog image into a digital image? How many images of size 1400x1200 with 256 gray levels can be store in a 2000 MB storage space?