APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

SEVENTH SEMESTER B. TECH DEGREE(HONS.) EXAMINATION DEC 19

Course code: 04 CS 7407

Course Name: -DIGITAL IMAGE PROCESSING & ANALYSIS

Max. Marks : 60 Duration: 3 Hours

PART A

Answer All Questions

Each question carries 3 marks

1. Calculate the number of bits required to store a 256 x 256 image with 16 gray levels.
2. How to analyze the relative importance played by each bit of the image.
3. Specify the objective of image enhancement techniques.
4. What is notch filter? Also write the filter function.
5. Explain Run- Length Coding with an example.
6. How will you detect an isolated point in a digital image.
7. Write global thresholding algorithm.
8. Write a short note on chain codes.

PART B

Each question carries 6 marks

9. Discuss the connectivity and relationship between Pixels in detail.

OR

10. Explain the following operations on images (a) Arithmetic (b) Logical (c) Geometric.
11. Discuss how histogram is useful for image enhancement.

OR

12. Discuss how Sharpening is accomplished by frequency domain filters.
13. Explain model of image degradation/restoration process with a block diagram.

OR

14. Explain Conjugate Gradient Method and Simulated Annealing Method.
15. Discuss the classification of noise in images and also draw different noise models.

OR

16. Calculate the average length of constant length code and Huffman code of the following image

4	4	4	4
2	2	1	1
2	3	3	2
0	0	5	5

17. What is thresholding?. Explain Segmentation based on thresholding.

OR

18. How the Edge Detection can be done using second order derivatives?
19. Describe any three methods for representing boundary.

OR

20. What is watermarking? Explain wavelet based watermarking in details.