PATAN MULTIPLE CAMPUS

DEPARTMENT OF STATISTICS AND COMPUTER SCIENCE

B.Sc. CSIT VI SEMESTER HOME ASSIGNMENT

SUBJECT:- Image Processing (CSC-363) FULL MARKS: 60

TIME: 3 hours PASS MARKS: 24

Attempt any TEN questions. All questions carry equal marks (6 each).

1. Explain the different components of a typical digital image processing system along with the block diagram.
2. Explain different types of image operations used in digital image processing with suitable examples.
3. What is a discrete fourier transform and how can you apply it in digital image processing. List out the properties of hadamard transform.
4. What is contrast stretching? Explain its algorithm with an example.
5. What is convolution? Explain different properties of convolution with suitable example.
6. What do you mean by smoothing operation? Explain in detail about mean filter.
7. What is a skeleton filter? Explain its algorithm. How can you apply skeleton filter for pattern recognition?
8. Define edge detection. Explain different types of first derivative filters.
9. Explain the algorithm for dilation and erosion.
10. How can you apply neural networks in digital image processing? Write an algorithm for Back Propagation.
11. Differentiate between: [any TWO]
    a. Fast Fourier Transform and Discrete Fourier Transform
    b. Local and Global operations
    c. Opening and Closing Filter
12. Write short notes on: [any TWO]
    a. Types of neighborhood
    b. Contour Representation
    c. Smoothing