Department of Artificial Intelligence & Data Science

III Year VI Semester

6AID3-01: Digital Image Processing

Note: Each assignment of Maximum Marks 10.All question carries equal marks.

ASSIGNMENT-I

Q1.Define the image and digital image processing. Explain the fundamental steps of digital image processing with suitable diagram.	BLT-2	CO-1
Q2.What are the applications of digital image processing? Explain components of image processing system.	BLT-2	CO-1
Q3. Explain image sensing and acquisition.	BLT-2	CO-1
Q4.Compare image sampling and quantization process in image processing.	BLT-3	CO-1
Q5. Sketch and Explain digital image representation.	BLT-4	CO-1

ASSIGNMENT-II

Q1. What do you understand by histogram? Explain its various specification also explain histogram equalization.	BLT-2	CO-2
Q2. Explain various basic intensity transfer function.	BLT-2	CO-2
Q3. Describe spatial filtering.	BLT-3	CO-2
Q4. What is Fourier transform? Explain its properties.	BLT-2	CO-2
Q5. Explain image smoothing and sharpening using Frequency Domain Filters.	BLT-2	CO-2

ASSIGNMENT-III

Q1. Explain the different types of noise models?	BLT-2	CO-3
Q2. Define the estimation of degradation function?	BLT-1	CO-3
Q3. Explain the noise filter.	BLT-2	CO-3
Q4. What are the advantages of a wiener filter over an inverse filter?	BLT-3	CO-3

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ASSIGNMENT-IV

Q1. Draw the block diagram of JPEG encoder & decoder.	BLT-3	CO-4
Q2. What is redundancy? Explain the different types of redundancies.	BLT-2	CO-4
Q3. Explain the lossy compression technique.	BLT-2	CO-4
Q4. What is Huffman's Coding? Explain in brief.	BLT-3	CO-4

ASSIGNMENT-V

Q1. Explain the first order derivative method for detection of an edge.	BLT-2	CO-5
Q2. What is region growing? Implement the process of splitting and merging an edge.	BLT-4	CO-5
Q3. Explain the Hough Transform.	BLT-2	CO-5
Q4. Explain the thre-sholding in brief. Also describe the type of thre-sholding.	BLT-2	CO-5
Q5. What is kernel? Explain the different type of kernels used in detection of edge.	BLT-4	CO-5

*BLT: BLT shows the **Bloom's taxonomy** levels.