

TILAK MAHARASHTRA VIDYAPEETH, PUNE
MASTER OF COMPUTER APPLICATIONS
(Specialization in Artificial Intelligence & Machine Learning)
EXAMINATION : JANUARY - 2025
SEMESTER - II

Sub: Digital Image Processing (MCAI 23-205)

Date : 13/01/2025	Total Marks :60	Time: 02.00 pm to 04.30 pm
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Instruction:

1. All questions are compulsory unless and otherwise stated.
2. Bold figures to the right of every question are the maximum marks for that question.
3. Candidates are advised to attempt questions in order.
4. Answers written illegibly are likely to be marked zero.
5. Use of scientific calculators, Log tables, Mollier Charts is allowed.
6. Draw neat and labelled diagram wherever necessary.

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| Q.1. | Answer the following in 2-3lines. (Any 5) | (10) |
|-------------|--|-------------|
1. Define Adjacency and Connectivity
 2. Enlist the properties of 2D Fourier transform.
 3. Define Image segmentation.
 4. Enlist various operators for edge detection.
 5. Describe psycho-visual redundancy
 6. What is image compression?
 7. What is point operation?
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| Q. 2. | Answer the following in short. (Any 4) | (20) |
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1. Write a note on coding redundancy.
 2. What is erosion and dilation?
 3. Describe with suitable example Huffman Coding.
 4. Explain sobel operator for image segmentation.
 5. Explain various image file formats.
 6. Write a note on fidelity criteria for image.
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| Q. 3. | Answer the following in detail. (Any 3) | (30) |
|--------------|--|-------------|
1. Explain the various elements of digital image processing system.
 2. Describe the fundamental steps in image processing.
 3. Explain graph based segmentation of image.
 4. Write in detail about Hadamard transformation.
 5. Describe the Discrete Cosine transform for image transformation.
