

M.Tech. Computer Science & Engineering CBCS Pattern Semester-II  
**PCSS23 - Advanced Digital Image Processing**

P. Pages : 1

Time : Three Hours



**GUG/W/23/10994**

Max. Marks : 70

- Notes :
1. Solve **any five** questions.
  2. All questions carry equal marks.
  3. Due credit will be given to neatness and adequate dimensions.
  4. Assume suitable data wherever necessary.

1. a) With neat block diagram explain the fundamental steps involved in digital image processing. **8**  
b) Write a short notes on sampling and quantization. **6**
2. a) Explain low pass averaging filter with example. **8**  
b) Explain the procedure for zooming an image using replication method. **6**
3. a) Explain the Histogram equalisation in histogram processing. **8**  
b) Equalize the give Histogram **6**

Grey Levels	0	1	2	3	4	5	6	7
Number of Pixels	100	90	50	20	0	0	0	0
4. a) Explain how ideal high pass filters are used for image sharpening using frequency domain filters. **8**  
b) Why Laplacian operator is not used in its original form as an edge detector? **6**
5. a) Explain the generalized image compression model with neat block diagram. **8**  
b) Write short note on LZW Coding. **6**
6. a) Explain segmentation using morphological watersheds. **8**  
b) Explain Dilation and Erosion with suitable example. **6**
7. a) Explain Fourier descriptors. **6**  
b) Explain matching method of object recognition. **8**
8. Write short notes on **any two**. **14**
  - a) FFT
  - b) Chain codes
  - c) HIT – or – MISS Transformation.

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