

Computer Science & Engineering (CBCS and Old Pattern) M.Tech.
Second Semester Old+CBCS (C.B.S. Pattern)
PCSS23 - Advanced Digital Image Processing

P. Pages : 1

Time : Three Hours



GUG/W/18/10994

Max. Marks : 70

- Notes : 1. Attempt **any five** questions.
2. All questions carry equal marks.
3. Illustrate your answers wherever necessary with the help of neat sketches.

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|----|------|--|-----------------|
| 1. | a) | What is digital Image processing. | 3 |
| | b) | Describe the history of image processing. | 3 |
| | c) | What are the applications of digital image processing. Explain with example. | 8 |
| 2. | a) | What is an histogram? How can it be used in image processing. Describe histogram equalization with the help of equation. | 7 |
| | b) | How is Sharpness of spatial filters done. Explain. | 7 |
| 3. | a) | Describe continuous wavelet transform with equation. | 7 |
| | b) | What are the factors motivating colour image processing. Explain Full colour and pseudo color. colour image processing. | 7 |
| 4. | a) | Explain the following terms in image compression. | 6 |
| | a) | Coding redundancy. | |
| | b) | Spatial and temporal redundancy. | |
| | c) | Irrelevant information | |
| | b) | Explain wavelet coding with the help of a block diagram. | 8 |
| 5. | a) | Explain the following terms with respect to morphological image processing. | 14 |
| | i) | Hole filling | ii) Convex Hull |
| | iii) | Thinning | iv) Thickening |
| | v) | Pruning | vi) Skeletons. |
| 6. | a) | What are the objectives of canny edge detector. Explain canny edge detector algorithm | 8 |
| | b) | Explain the region growing segmentation technique. | 6 |
| 7. | a) | Explain how a boundary can be represented by minimum perimeter polygon method. | 8 |
| | b) | Define the following terms in respect to boundary description | 6 |
| | i) | Length of boundary. | |
| | ii) | Diameter of boundary. | |
| | iii) | Curvature. | |
| 8. | | Write short notes on any two . | 14 |
| | a) | Patterns and pattern classes. | |
| | b) | Optimum Statistical classifiers. | |
| | c) | Image restoration. | |
