



R20 Regulation
TKR COLLEGE OF ENGINEERING AND TECHNOLOGY
(Autonomous, Accredited by NAAC with 'A' Grade)
B.Tech V Semester Regular Examinations, January 2023

Subject code: 3E5DB

IMAGE PROCESSING & PATTERN RECOGNITION
(Professional Elective)
(Electronics and Communication Engineering)

Maximum Marks: 70

Date: 23.01.2023 Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 Define an Image.
- 2 What is Sampling and Quantization?
- 3 What is Mean filter?
- 4 What is Redundancy?
- 5 What are the properties for Image segmentation?
- 6 What is Dilation and Erosion?
- 7 What are Chain codes?
- 8 What are Skeletons?
- 9 What are the problems in pattern recognition system?
- 10 What is the clustering in pattern classification?

Part-B

Answer All the following questions.

(5X10M=50Marks)

- 11 Explain about Fundamental Steps in Digital Image Processing. [10]
OR
- 12 Explain about Basic Steps for Filtering in the Frequency Domain. [10]
- 13 A. Explain about a Model of the Image Degradation process. [5]
B. Explain about Inverse Filtering. [5]
OR
- 14 A. Explain about Image Compression System. [5]
B. Explain about Predictive Lossless Compression. [5]
- 15 Explain about Global Processing via the Hough Transform. [10]
OR
- 16 A. What is Opening and Closing in Morphological Image processing. [5]
B. Explain about Basic Morphological algorithms. [5]

- 17 A. Explain about Polygonal approximations. [5]
B. Explain about Regional Descriptors. [5]

OR

- 18 Explain about Principal Components for Description. [10]
- 19 A. What are the design concepts of pattern recognition. [5]
B. Explain about automatic pattern recognition system model. [5]
- OR
- 20 Explain about K-means algorithm. [10]