BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)
B. Tech. Sem - VIII Computer Science & Business Systems : SUMMER : 2025
SUBJECT: IMAGE PROCESSING & PATTERN RECOGNITION

Day : Wednesday
Date : 04/06/2025

S-24217-2025

Time : 02:30 PM-05:30 PM
Max. Marks : 60

N.B.

1) All questions are **COMPULSORY**.
2) Figures to the **RIGHT** indicate **FULL** marks.
3) Assume suitable data **WHEREVER** necessary.
4) Draw neat diagrams **WHEREVER** necessary.

Q.1 Describe the fundamental steps in image processing in detail **(10)**

OR

Q.1 List different types of image transformations used in image processing. **(10)**

Q.2 Evaluate the performance of Wiener filter in comparison to other restoration techniques. **(10)**

OR

Q.2 Explain the two different types of image compression techniques and their applications. **(10)**

Q.3 Explain the concept of shape matching with examples. **(10)**

OR

Q.3 How does edge linking improve edge detection results? Explain in detail **(10)**

Q.4 Compare and contrast the strengths and weaknesses of different pattern recognition algorithms. **(10)**

OR

Q.4 Explain the significance of the normal distribution in pattern recognition tasks. **(10)**

Q.5 Describe the role of parameter estimation in pattern recognition. **(10)**

OR

Q.5 Explain Bayesian Decision Theory classification in detail **(10)**

Q.6 Describe the role of the Hough Transform in image analysis. **(10)**

OR

Q.6 Describe the mathematical principles behind PCA and its applications in feature extraction. **(10)**

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