B. TECH. (COMPUTER SCIENCE & BUSINESS SYSTEMS) (CBCS - 2018 COURSE)
B.Tech. (CSBS) Sem - VIII : WINTER : 2024
SUBJECT: IMAGE PROCESSING & PATTERN RECOGNITION

Day : Wednesday
Date : 27/11/2024

W-20497-2024

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) Use of non-programmable calculator is allowed.

Q.1	Describe the fundamental steps in image processing in detail.	**(10)**
	OR	
Q.1	Which compression technique gives better performance? Explain in detail.	**(10)**
Q.2	What is digital sampling and quantization? Explain in detail.	**(10)**
	OR	
Q.2	What is the importance of image enhancement in image processing? Explain in brief any two-point processing techniques implemented in image processing.	**(10)**
Q.3	Briefly discuss the basic global thresholding and basic adaptive thresholding processes used in image segmentation.	**(10)**
	OR	
Q.3	Describe the basic relationship between the pixels. * Neighbour of a pixel * Adjacency, connectivity, region and boundaries.	**(10)**
Q.4	Prove that a Bayes classifier is equivalent to a minimum distance classifier, assuming that the feature vector is Gaussian.	**(10)**
	OR	
Q.4	Describe the design principles of pattern recognition system with an example.	**(10)**
Q.5	Explain in detail the Principal Component Analysis (PCA).	**(10)**
	OR	
Q.5	Explain Bayes decision rule. Explain how it can be used for two-class classification.	**(10)**
Q.6	Describe Fisher Linear Discriminant Analysis with example.	**(10)**
	OR	
Q.6	What are the three types of HMM variants? Explain in detail.	**(10)**

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