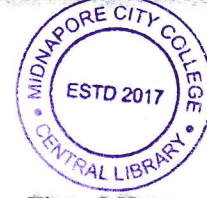


**PG (CBCS)**  
**M.Sc. Semester-I Examination, 2022**  
**COMPUTER SCIENCE**  
**PAPER: COS 103**



Full Marks: 40

Time: 2 Hour

Write the answer for each unit in separate sheet

**COS M I:**  
**(PATTERN RECOGNITION)**

**GROUP-A**

1. Answer any **TWO** from the following questions: 2×2=4
- a. What is Pattern recognition? Explain with example.
  - b. What is supervised learning?
  - c. Write purpose of pattern classifiers?
  - d. List the various areas of application of pattern recognition.

**GROUP-B**

2. Answer any **TWO** from the following questions: 2×4=8
- a. Describe different Phases in Pattern Recognition System.
  - b. What is Training and Learning in Pattern Recognition.
  - c. Explain feature extraction.
  - d. Write short note (any one) on following.
    - i. Decision tree
    - ii. Bayes Classification

**GROUP-C**

3. Answer any **ONE** from the following questions: 1×8=8
- a. Describe different activities for designing the Pattern Recognition Systems.  
 Discuss comparatively on Parametric Estimation and  
 Non- Parametric Estimation. 2+3+3
  - b. Explain Maximum Likelihood Parameter Estimation.  
 Describe Bayesian Estimation. 4+4

P.T.O.

(2)

**COS M II:  
(IMAGE PROCESSING)**



**GROUP-A**

1. Answer any **TWO** of the following questions:

2×2=4

- a. What do you mean by sampling of an image?
- b. What do you understand by image registration?
- c. What is erosion operator?
- d. What is edge detector?

**GROUP-B**

2. Answer any **TWO** of the following questions:

2×4=8

- a. Explain the procedure for histogram equalization.
- b. Explain the Gaussian high pass filter.
- c. What is Gradient and Laplacian? Explain their use for sharpening filter in special domain.
- d. Explain the Bit-Plane Slicing.

**GROUP-C**

3. Answer any **ONE** of the following questions:

1×8=8

- a. Explain the basic concept of spatial filtering in image enhancement and hence explain the importance of smoothing filters and median filters.
- b. Explain three basic gray level transformation for enhance the image.

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