Total pages: 02

PG (CBCS)
M.SC. Semester- I Examination, 2023
COMPUTER SCIENCE
PAPER: COS 103
(PATTERN RECOGNITION & IMAGE PROCESSING)

Full Marks: 40 **Time: 2 Hours**

The figures in the right-hand margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

Write the answer for each unit in separate sheet

M1: PATTERN RECOGNITION

GROUP-A

1. Answer any TWO of the following questions: **2×2=4**

a) What do you mean by Feature Extraction?
b) What is Pattern Classification?
c) What is feature vector?
d) What is good cluster?

GROUP-B

2. Answer any TWO of the following questions: **2×4=8**

a) Write short note on Perceptron.
b) What are the differences between Parametric Estimation and non-Parametric Estimation?
c) Write the differences between supervised and unsupervised learning.
d) Write short note on Parzen windows.

GROUP-C

3. Answer any ONE of the following questions: **1×8=8**

a) What are the differences between maximum likelihood estimation and bayesian estimation
b) Explain nearest neighbor algorithm (KNN) with example.

(P.T.O.)

M2: IMAGE PROCESSING

GROUP-A

1. Answer any TWO of the following questions: **2×2=4**

a) Compare Brightness and Contrast?
b) What is Contrast Stretching?
c) What is the use of MASK in image processing?
d) What do you mean by Opening which is used in Morphological Image Processing?

GROUP-B

2. Answer any TWO of the following questions: **2×4=8**

a) What is edge detector? Compare them. 2+2
b) What do you mean by Sharping? How can it be achieved? 2+2
c) What do you mean by Dilation and Erosion? State their relation. 2+2
d) What is Gradient and Laplacian? Explain their use for sharping filter in spatial domain. 2+2

GROUP-C

3. Answer any ONE of the following questions: **1×8=8**

a) What do you mean by Image enhancement? Explain three basic gray level transformation for enhance the image? 3+5
b) What is Histogram? What do you mean by Histogram Equalization? Explain with an example. 2+2+4

******