5. (a) Write short notes on the following : (CO1)

(i) Bayes' Theorem

(ii) Regression

OR

(b) Calculate coefficient of correlation from the following data : (CO2)

X	Y
12	14
9	8
8	6
10	9
11	11
13	12
7	3

400

H Roll No. .....

TMC–105

M. C. A. (FIRST SEMESTER)
MID SEMESTER EXAMINATION, 2021-22

STATISTICAL DATA ANALYTICS WITH R

Time : 1 : 30 Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any *one* of the sub-questions.

(ii) Each question carries 10 marks.

1. (a) Define the term Statistics. Explain Descriptive Statistics and Inferential Statistics with examples. (CO1)

OR

(b) What do you mean by Summary Statistics ? Create a histogram for the following test scores :

89, 87, 84, 77, 74, 71, 70, 66, 21, 25.

Discuss the steps also to create a histogram. (CO1)

P. T. O.

2. (a) What is IQR ? The height of 20 students is given as :

1.7, 2.4, 4.9, 5.1, 5.2, 5.4, 5.5, 5.5, 5.6, 5.6, 5.8, 5.9, 6, 6.1, 6.2, 6.5, 7.1, 14.5, 25.2, 41.2

Find out the outliers from the above data using IQR. (CO1)

OR

(b) How can sampling techniques classified ? Explain various sampling techniques with examples. (CO1)

3. (a) Discuss the following terms with example : (CO2)

(i) Random Experiment

(ii) Sample Space

(iii) Event

(iv) Theorems of Probability

OR

(b) A bag contains 8 white and 3 red balls. If two balls are drawn at random, find the probability that : (CO2)

(i) Both are white.

(ii) Both are red.

(iii) One is of each color.

4. (a) Define Binomial Distribution. Point out its chief characteristics and uses. Under what conditions does it tend to a Poisson ? (CO2)

OR

(b) The number of customers appear at the ticket counter of Railway station at a rate ₹ 180 per hour. Find the probability that during a given minute : (CO2)

(i) No customer appears

(ii) Only two customers appear

(iii) At least two customers appear

(iv) At most two customers appear

(v) Less than three customers appear

Assume Poisson distribution.