

# **COEP Technological University**

## (COEP Tech)

## A Unitary Public University of Government of Maharashtra

## [MA-23005] Probability and Statistics

Program : F.Y.B.Tech Academic Year : 2023-24

Examination: Med-Sem exam on R software Maximum Marks: 35

Branch: Student MIS Number :

#### Instructions:

- 1. Write an appropriate R command giving titles to the graph.
- 2. Save the output file using your MIS ID.
- 3. Displaying legend box is compulsory for some graphs.

## Attempt All the questions.

Q.1) For the following frequency distribution

[5M]

X	1	2	3	4	5
f	7	11	9	8	3

Write a R code to find

- a) Mean
- b) Median
- c) Mode
- d) Seventh decile
- e) 29th percentile.

### Q.2) Create a dataframe of the following two vectors:

[2M]

Price	10	15	30	42	50	60
Qty	4	20	15	10	16	8

Also write a R code to add vector/variable named value=price\*qty in the created dataframe.

- Q.3) Suppose the age is a vector containing ages of 10 persons as 22,27,31,41,30,25,19,20,23,35 [5M]
  - a) Access the age of persons except 5th and 7th.
  - b) Create a vector 'age30' with age of persons>30
  - c) Access the age of 4th,5th and 6th persons
  - d) Create a vector 'age 2' with age of persons between 20 and 25
  - e) Access the age of last 3 persons.
- Q.4) Create a heatmap using inbuilt iris datasets.

[3M]

Also write a R code for the following

- a) Write a code to remove row dendrogram
- b) Write a code to remove column dendrograms:
- Q.5) Write a R code to Present the following data into subdivided bar diagram and multiple bar diagram. The data relating to the students population of a college in the different departments for 3 years are given below. Also display legend box. [5M]

	1965	1975	1985
Arts	300	400	500
Science	180	300	380
Commerce	300	500	600
Law	200	250	300

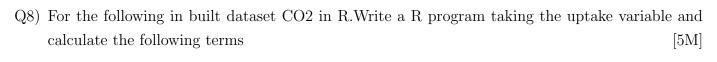
## Q.6) Solve the following questions

[5M]

- a) Write a R program to create a Dataframes which contain details of 5 employees and display summary of the data.
- b) Write a R program to create a two-dimensional  $5\times3$  array of sequence of even integers greater than 50.
- c) Write a R program to find the levels of factor of a given vector 1, 2, 3, 3, 4, NA, 3, 2, 4, 5, NA, 5.
- d) Write a R program to create a list containing strings, numbers, vectors and a logical values.
- e) Write a R program to create a vector which contains 10 random integer values between -50 and +50.
- Q7) Read the file moviesData.csv and solve the following questions.

[5M]

- a) Use the moviesData. Create a histogram of the object named imdb\_num\_votes in this file.
- b) Create a pie chart of the object mpaa\_rating.
- c) Create a bar chart of critics\_score for the first 10 movies.
- d) Create a scatter plot of imdb\_rating and imdb\_num\_votes to see their relation.
- e) Create a boxplot for dvd\_rel\_day variable and also display labels.



- a) Standard deviation.
- b) Quartile deviation.
- c) Range.
- d) Mode.
- e) Coefficient of range.