24U1100   (Pages: 2)   Name   :   ....

Reg. No   :   ....

FIRST SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2024
(FYUGP)
CC24U STA1 MN103 - INTRODUCTORY STATISTICS WITH R
(Statistics - Minor Course)
(2024 Admission - Regular)

Time: 2.0 Hours

Maximum: 70 Marks

Credit: 4

Part A (Short answer questions)
Answer *all* questions. Each question carries 3 marks.

1. Describe Primary data and Secondary data.   [Level:2] [CO1]

2. Describe how a "More Than" cumulative frequency distribution is constructed. What   [Level:2] [CO1]
   steps are involved in its creation?

3. Classify the types of quantitative data and provide one example for each type.   [Level:2] [CO1]

4. Explain the steps involved in constructing a line diagram for a given dataset.   [Level:2] [CO2]

5. Compare the harmonic mean and arithmetic mean by calculating both for the dataset: 5,   [Level:2] [CO3]
   10, and 20.

6. List any three commonly used R packages and explain their functions.   [Level:2] [CO4]

7. Describe how to find information on a function in R using the `help()` function.   [Level:2] [CO4]

8. Describe how to use R to produce simple graphical plots.   [Level:2] [CO4]

9. Construct a sequence from 1 to 50 with an interval of 5 in R and present the result.   [Level:2] [CO4]

10. Create a bar plot in R using the data: categories = c('A', 'B', 'C', 'D') and values = c(9, 20,   [Level:2] [CO4]
    10, 25).

(Ceiling: 24 Marks)

Part B (Paragraph questions/Problem)
Answer *all* questions. Each question carries 6 marks.

11. Given the following ungrouped data of exam scores: 65, 72, 80, 85, 90, 70, 75, 80, 85,   [Level:2] [CO1]
    90, 95, construct an ungrouped frequency distribution and explain when this type of
    distribution is preferable to a grouped frequency distribution.

12. A car dealership sold different models of cars during a month, as shown below: [Level:2] [CO2]

Car Model	Sedan	SUV	Hatchback	Truck
Number Sold	14	10	8	6

Draw a pictogram to illustrate the number of cars sold for each model.

13. A manufacturer collected data on the lifespan (in years) of a particular product model. [Level:3] [CO2]
The data is as follows:

Product Lifespan (years)	1-2	2-3	3-4	4-5
Frequency (f)	4	7	12	8

Construct a histogram to represent the distribution of product lifespans.

14. The weekly wages of 492 employees are given below. Draw a frequency Curve. [Level:3] [CO2]

Weekly wage (not more than)	40	45	50	55	60	65	70	75
Employees	212	296	368	429	460	481	490	492

15. The following table represents the frequency distribution of marks scored by students in [Level:3] [CO2]
a test. Construct the less than and greater than ogives for the given data:

Marks Range   0-20   20-40   40-60   60-80   80-100
Frequency   10   18   25   22   15

16. Find the geometric mean of the following set of values: 7, 14, 28, 56, and 112. [Level:2] [CO3]

17. A survey was conducted to find out the age distribution of people attending a concert. [Level:2] [CO3]
The frequency distribution is as follows:

Age Group (years)   15-20   20-25   25-30   30-35
Frequency (f)   10   18   14   8
Determine the mode for the age group of people attending the concert.

18. Calculate the median from the following data: [Level:2] [CO3]

Size	5	8	10	15	20	25
Frequency	3	12	8	7	5	4

(Ceiling: 36 Marks)

Part C (Essay questions)

Answer any *one* question. The question carries 10 marks.

19. The following table shows the population of India religion-wise according to 1981-2011 [Level:3] [CO2]
census. Draw a multiple-bar diagram on the given data.

Religion	Population(%)			
	1981	1991	2001	2011
Hindu	82.3	81.53	80.46	79.8
Muslim	11.75	12.61	13.43	14.23
Christian	2.44	2.32	2.34	2.3
Others	3.51	3.54	3.77	3.67

20. A gym keeps track of the number of times people visit each month. The following table [Level:2] [CO3]
shows the grouped frequency distribution for the visits:

Visits per Month	0-5	5-10	10-15	15-20	20-25
Frequency (f)	3	7	12	8	5

Calculate the mean and mode of the number of visits.

(1 × 10 = 10 Marks)

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