2506E554

Candidate's Seat No :_____

IMSc (CS) (NEP) Sem.-2 Examination
MDC-CS-124T
Computer Oriented Stat Methods
June-2024

Time : 1-00 Hour]

[Max. Marks : 25

Instructions:

- **Write both the Sections in the separate answer book.**
- **Both Sections having equal weightage.**
- **Draw Diagrams wherever necessary.**
- **Make Assumptions wherever necessary.**

Q-1 Attempt the following questions: **(10)**

(A) Explain how Acharya Pingala presented a formula to generate all possible combinations of light (लघु) and heavy(गुरु) syllables, for a word of n syllables.

(B) Out of 300 persons residing in a region, a sample of 30 person is selected at random and the heights (in cm.) of these selected persons are as under:

163 148 151 162 145 152 149 158 153 149
150 152 145 141 162 168 148 158 149 141
146 155 159 150 161 153 162 160 154 165

　1) Distribute these data into 6 classes and also find the mid value of each class

　2) Obtain "less than" type cumulative frequency distribution.

　3) What is the percentage of persons having height less than 155 cm.?

　4) How many persons have the height between 147 to 157 cm.?

OR

(A) Write down the three different types of skews. Explain any two in details.

(B) The distribution of ages of 48 persons in an old age home is given below. Which formula will be appropriate to find the mode? Why? Find the modal age of the persons in the old age home using the formula you have chosen.

Age (years)	50-60	60-65	65-70	70-85	85-100
No. of persons	6	10	19	9	4

Q-2   Attempt the following questions:

(10)

(A)   Automobiles traveling on a road with a posted speed limit of 55 miles per hour are checked for speed by a state police radar system. Following is a frequency distribution of speeds.

Speed (miles per hour)	45-49	50-54	55-59	60-64	65-69	70-74	75-79
No. of vehicles	10	40	150	175	75	15	10

1) What is the mean speed of the automobiles traveling on this road?

2) Compute the variance and the standard deviation.

(B) The data on price(x) and quantity(y) purchased relating to a commodity for 5 months is given

x_i	4	6	11	3	16
y_i	50	50	40	60	30

1) Compute the sample covariance between prices and quantity.

2) Compute the sample correlation coefficient between prices and quantity.

3) What can you say about the relationship between the price and quantity?

OR

(A) Find the quartile deviation and coefficient of quartile deviation of the marks from the following frequency distribution of marks of 43 students of a school.

Marks	10	20	30	40	50	60
No. of persons	4	7	15	8	7	2

(B) The information of profits (in lakhs Rs.) of 50 firms in the last year is given below. Find the standard deviation of the profit of the firms.

Profit (lakh Rs.)	10	20	30	40	50	60
No. of firms	4	7	15	8	7	2

Q-3 Attempt any of the **FIVE** questions: **(05)**

(A) Define secondary data with example.

(B) If the mean for a certain size of data set is 50. What will be the value of mean if we add "10" to each of these observations?

(C) Define semi-inter-quartile range. Write coefficient of quartile deviation.

(D) Define regression coefficient.

(E) Give the name of a method to obtain the best fitted regression line.

(F) Write down the interpretation of notation $b_{yx} = 5$.

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