

Fyfm

Basic stats

Oct; 12

MN10 AFB

TIME : 2 Hrs.

Marks : 60

Q.1 a. Draw less than curve of the following distⁿ also locate Median. (5)

| | | | | | |
|-------------------------------|-------|-------|-------|-------|-------|
| Travelling time in minutes | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 |
| No. of Employers | 50 | 130 | 200 | 70 | 60 |

b. Find the missing Frequency given that the _____ Arithmetic Mean of Advertising Expenditure is Rs. 5625. (6)

| Advt. Expenditure in Rs. | No. of Companies. |
|--------------------------|-------------------|
| 2000 - 3000 | 10 |
| 3000 - 4000 | 15 |
| 4000 - 5000 | 30 |
| 5000 - 6000 | — |
| 6000 - 7000 | 65 |
| 7000 - 8000 | 25 |

c. Write Merit & De-merit of Range and Quartile deviation. (4)

OR

Q.1 a. Find Median and Mode of the distribution Data given below. (6)

| | | | | | |
|-----------------|-------|-------|-------|-------|-------|
| Amount in Rs. | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |
| No. of Students | 50 | 150 | 175 | 100 | 25 |

b. The following table gives the distribution of 100 families according to Expenditure. If Mode of the distⁿ is 24, Find the missing Frequencies x & y. (6)

| | | | | | |
|--------------------|--------|---------|---------|---------|---------|
| Expenditure in Rs. | 0 - 10 | 10 - 20 | 20 - 30 | 30 - 40 | 40 - 50 |
| No. of Families | 14 | x | 27 | y | 15 |

c. Write Short Note on Primary & Secondary data. (3)

Q.2 a. Calculate Quartile Deviation and Coefficient of Quartile Deviation. (5)

| | | | | | |
|---------------------|-------|--------|---------|---------|---------|
| No. of Cracks | 4 - 8 | 8 - 12 | 12 - 16 | 16 - 20 | 20 - 24 |
| No. of Road Segment | 2 | 5 | 11 | 13 | 9 |

(P.T.O)

b. Find Rank Correlation of the given data.

(5)

| Rank According to Seniority | Rank According to Efficiency |
|-----------------------------|------------------------------|
| 1 | 5 |
| 2 | 4 |
| 3 | 2 |
| 4 | 1 |
| 5 | 7 |
| 6 | 8 |
| 7 | 6 |
| 8 | 3 |

c. The Sum of squares of differences between ranks is found to be 60. The Rank Coefficient of Correlation is 0.5. What is the number of pairs in the data?

(5)

OR

Q.2 a. Find for the following data.

$$\Sigma x = 98,$$

$$\Sigma x^2 = 729$$

$$\Sigma y = 55,$$

$$\Sigma y^2 = 406$$

$$\Sigma xy = 400,$$

$$N = 40$$

(5)

b. Find standard deviation of the following data.

(5)

| Pollutants | No. of Sites |
|------------|--------------|
| 5 - 13 | 30 |
| 13 - 21 | 64 |
| 21 - 29 | 36 |
| 29 - 37 | 16 |
| 37 - 45 | 04 |

c. The first of the two groups has 100 items with Mean 45 and Variance 49. If the Combined group has 250 items with Mean 51 and Variance 130. Find the Mean and Standard deviation of the Second group.

(5)

Q.3 a. Given the following regression equations. Find \bar{x} , \bar{y} &

$$2x + 3y - 61 = 0$$

$$x + y - 25 = 0$$

(6)

b. Find the Seasonal Indices for the following data.

(5)

| Year | Quarters | | | |
|------|----------|----|-----|----|
| | I | II | III | IV |
| 1 | 52 | 52 | 51 | 53 |
| 2 | 54 | 53 | 51 | 48 |
| 3 | 51 | 53 | 52 | 53 |

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b. Find Expectation & variance. (5)

| | | | | | | |
|-------------|---|------|------|------|------|------|
| Demand | 1 | 2 | 3 | 4 | 5 | 6 |
| Probability | K | 0.15 | 0.20 | 0.25 | 0.20 | 0.10 |

c. Write Short Note on Error 1 & Error 2. (5)

| Commodity | Base Year | | Current Year | |
|-----------|-----------|----------|--------------|----------|
| | Price | Quantity | Price | Quantity |
| A | 12 | 50 | 20 | 120 |
| B | 14 | 50 | 18 | 100 |
| C | 16 | 80 | 18 | 150 |
| D | 15 | 40 | 18 | 140 |

Q.4 a. Two letters are drawn at random from the word RANDOM, one after another. Find the Probability that - (5)

i. both are Vowels

ii. both are Consonants

iii. one is Consonant & other is Vowel

b. Find Mean & Variance of the following dist. (5)

| | | | | | |
|-------------|---------------|----------------|---------------|----------------|----------------|
| x | -10 | 15 | 20 | 25 | 30 |
| Probability | $\frac{1}{2}$ | $\frac{3}{20}$ | $\frac{1}{2}$ | $\frac{1}{10}$ | $\frac{1}{20}$ |

c. Write Short Note on Sampling (5)

| Year | Quarters | | | |
|------|----------|-----|-----|-----|
| | I | II | III | IV |
| 1997 | 112 | 103 | 107 | 106 |
| 1998 | 103 | 107 | 107 | 106 |
| 1999 | 112 | 103 | 107 | 106 |