



Date: 25-04-2018

Dept. No.

Max. : 100 Marks

Time: 01:00-04:00

**PART – A**

Answer ALL the questions :

(10 x 2 = 20 marks)

1. Define Statistics.
2. Write down any 2 limitations of Statistics
3. A sample of size 15 has mean 3.5 and Standard deviation 3.0. Another sample of size 22 has mean 4.7 and Standard deviation 4.0. Find the combined mean and the combined S.D.
4. When the distribution is symmetric what is the value of  $\mu_3$ ?
5. You are given Mean = 50, C.V = 40% SK= -0.4. Find the standard deviation.
6. Write the formula for spearman's correlation.
7. Given information N = 50, Mean of Y = 44, variance of X is 9/16 of the variance of Y.  
Regression Equation of X on Y =  $3Y - 5X = -180$   
Find the coefficient of correlation between X and Y?
8. Write down any 2 merits of Arithmetic mean.
9. For two attributes A and b, we have  $(AB) = 35$  ;  $(A) = 55$  ;  $N = 100$   
 $(\alpha\beta) = 20$ . Calculate the Yule's coefficient of association.
10. Explain Kurtosis.

**PART – B**

Answer any FIVE questions

(5 x 8 = 40 marks)

11. Point out the various methods of classifying statistical data.
12. Explain the measures of dispersion.
13. Calculate the Geometric mean for the following data

| Yield of wheat | No. of farms |
|----------------|--------------|
| 7.5-10.5       | 5            |
| 10.5-13.5      | 9            |
| 13.5 - 16.5    | 19           |
| 16.5 – 19.5    | 23           |

|             |   |
|-------------|---|
| 19.5 – 22.5 | 7 |
| 22.5 – 25.5 | 4 |
| 25.5 – 28.5 | 1 |

14. In a small town, a survey was conducted in respect of profits made by retail shops. The following results were obtained. Calculate (a) the average profit made by a retail shop, (b) total profit by all shop and (c) the coefficient of variation of earnings.

| Profit ('000) Rs | No. of shops |
|------------------|--------------|
| -4 to -3         | 4            |
| -3 to -2         | 10           |
| -2 to -1         | 22           |
| -1 to 0          | 28           |
| 0 to 1           | 38           |
| 1 to 2           | 56           |
| 2 to 3           | 40           |
| 3 to 4           | 24           |
| 4 to 5           | 18           |
| 5 to 6           | 10           |

15. Explain briefly the fitting of growth curves.

16. Explain scatter diagram.

17. You are given the following results for the heights (X) and weights (Y) of 1,000 workers of factory:

|                                    |                                      |
|------------------------------------|--------------------------------------|
| Mean of X = 68 inches              | Standard deviation of X = 2.5 inches |
| Mean of Y = 150 lbs                | Standard deviation of Y = 20lbs      |
| Correlation coefficient $r = -0.6$ |                                      |

Estimate (i) the weight of a particular factory worker who is 5 feet tall

(ii) the height of a particular factory worker whose weight is 200 lbs.

18. From the following data prepare 2 x 2 table and using Yule's coefficient of association, discuss whether there is association between literacy and unemployment.

|                         |             |
|-------------------------|-------------|
| Illiterate unemployment | 220 persons |
| Literate employed       | 20 persons  |
| Illiterate employed     | 180 persons |
| Total number of persons | 500         |

### PART - C

Answer any TWO questions

(2 x 20 = 40 marks)

19. Prepare a questionnaire to conduct survey for the necessity of NEET exam in Medical courses in our country. (Minimum 20 questions) **20 marks**

20. (i) Diagrams helps us to visualize the whole meaning of a numerical data at a glance – comment

**10 marks**

(ii) The frequency distribution of weight in grams of mangoes of a given variety is given below.

Calculate the arithmetic mean, median, and mode

| Weight (in gms) | No. of mangoes |
|-----------------|----------------|
| 410-419         | 14             |
| 420-429         | 20             |
| 430-439         | 42             |
| 440-449         | 54             |
| 450-459         | 45             |
| 460-469         | 18             |
| 470-479         | 7              |

21. The following table gives the sterling assets of the R.B.I in crores of rupees:

(a) Represent the data graphically

(b) Fit a straight line trend

(c) Show the trend on the graph

(d) Also estimate the figures for 2011

| Year  | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-------|------|------|------|------|------|------|
| Asset | 83   | 92   | 71   | 90   | 169  | 191  |

22. (i) Calculate Pearson's coefficient of correlation from the following data.

|   |    |    |    |    |    |    |    |    |    |    |    |
|---|----|----|----|----|----|----|----|----|----|----|----|
| X | 45 | 55 | 56 | 58 | 60 | 65 | 68 | 70 | 75 | 80 | 85 |
| Y | 56 | 50 | 48 | 60 | 62 | 64 | 65 | 70 | 74 | 82 | 90 |

(ii) Write down the relation between correlation and regression analysis.

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