



Date: 24-10-2018
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

SECTION - A

Answer ALL the questions:

(10x20=20 Marks)

1. Define Ordinal Scale.
2. Write down any 2 limitations of Statistics.
3. Define Positional average.
4. What is Pilot Survey?
5. Define Skewness.
6. Write down the formula for 7th Decile for continuous series.
7. The mean and standard deviation of 100 items are found to be 40 and 10. At the time of calculation two items are wrongly taken as 30 and 72 instead of 3 and 27. Find the corrected mean.
8. Write down the normal equations for the fitting of second degree parabola.
9. From the following data, calculate (i) correlation coefficient (ii) SD of y
$$b_{xy} = 0.85 \quad b_{yx} = 0.89 \quad \sigma_x = 3$$
10. For two attributes A and B we have $(AB) = 8$, $(A) = 18$, $(\alpha\beta) = 5$ $N = 35$.
Find the missing frequencies.

SECTION – B

Answer any FIVE questions :

(5 X 8 = 40 MARKS)

11. (a). Describe the various steps that are taken in conducting a statistical survey
(b). How do you ensure the success of a mailed questionnaire method?

12. (a) Discuss the methods of presentation of statistical data through diagrams.

(b). Draw histogram from the following data and measure the modal value. Verify it by actual calculation.

X	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
f	5	11	19	21	16	10	8	5	3	1

13. The following are the annual profits, in thousand of rupees, in a certain business :

Year	2001	2002	2003	2004	2005	2006	2007
profit	60	72	75	65	80	85	95

(i) Use the method of Least squares to fit a straight line to the above data

(ii) Also estimate the profit for the year 2009.

14. (a). What is meant by correlation ? What are the properties of coefficient of correlation?

(b). Calculate Pearson's coefficient of correlation from the following data. Take 65 and 70 as the assumed average of the variate X and Y respectively.

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

15.(a). Describe the different types of curves in kurtosis.

(b). For a group of 20 items, $\sum X = 1452$, $\sum X^2 = 144280$ and mode = 63.7. Find the pearsonian coefficient of Skewness.

16. Calculate first four moments from the following data and find out β_1 and β_2 .

X	0	1	2	3	4	5	6	7	8
f	5	10	15	20	25	20	15	10	5

17. From the following regression equation find the mean value of X and Y series. Given that the variance of X = 9. $8X - 10Y = -66$ and $40X - 18Y = 214$. Find

(i) Average values of X and Y (ii) Correlation coefficient between two variables X and Y.

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 unemployed	220 persons
Literate employed	20 persons
Illiterate employed	180 persons
Total number of persons	500

SECTION – C

Answer any TWO questions:

(2 X 20 = 40 MARKS)

19. (a) . Point out the objectives, importance and various methods of classifying statistical data.

(b). Differentiate Sampling and Non sampling errors.

20. (a). The following table gives the weight of 31 persons in sample survey. Calculate the geometric mean.

Wt.	130	135	140	145	146	148	149	150	157
freq	3	4	6	6	3	5	2	1	1

(b). Compute Mean deviation from mean from the following data

Ht.	158	159	160	161	162	163	164	165	166
freq	15	20	32	35	33	22	20	10	8

21. You are given the following results for the heights (X) and weights (Y) of 1,000 workers of a factory : mean of X = 68 inches mean of Y = 150 lbs

Standard deviation of X = 25 inches

Standard deviation of Y = 20 lbs and

Correlation coefficient = 0.6

Estimate from the above data

(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.

(b) Discuss the difference between correlation and regression.

22. (a) Write down the conditions under which two attributes A and B are (i) independent (ii) positively associated (iii) Negatively associated . Explain the conditions.

(b). 1500 candidates appeared for a competitive examination 425 were successful, 250 had attended a coaching class and of these 150 came out successful. Check whether the coaching class is effective.

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