

ANDHRA UNIVERSITY
MODEL PAPER
B.A./B.Sc- CBCS REVISED SYLLABUS
FIRST SEMESTER
PART-1 STATISTICS
PAPER-I : DESCRIPTIVE STATISTICS
(with Mathematics combination)
(Effective from 2020-2021 admitted batch)

TIME:3 HOURS

MAX MARKS:75M

(SECTION A- $5 \times 5 = 25$ MARKS)

Answer any five from the following eight questions

1. Distinguish between primary data and secondary data.
2. Explain various methods of measuring skewness.
3. Explain sheppard's correction.
4. Explain multiple correlation coefficient . Mention its properties.
5. Derive the normal equations for fitting of the curve $y = ab^x$.
6. Show that the correlation coefficient is independent of origin and scale.
7. Distinguish between correlation and regression coefficients.
8. Explain the criteria for independence of attributes.

(SECTION B- $5 \times 10 = 50$ MARKS)

Answer the following (one from each unit)

9. a) What is primary data? State the various methods of collecting primary data and discuss their relative merits

(or)

- b) Calculate the mean, median, mode of the following data

| Wages(in rs) | 0-20 | 20-40 | 40-60 | 60-80 | 80-100 |
|-------------------|------|-------|-------|-------|--------|
| Number of workers | 10 | 15 | 40 | 25 | 10 |

10. a) Find the standard deviation for the following distribution

| Age | 20-25 | 25-30 | 30-35 | 35-40 | 40-45 | 45-50 |
|-------------------|-------|-------|-------|-------|-------|-------|
| Number of persons | 170 | 110 | 80 | 45 | 40 | 35 |

(or)

b) Define central and non central moments. Derive the relationship between the moments about mean in terms of moments about any point.

11. a) Explain curve fitting. Fit a straight line of the form $y=a+bx$ for the following data

| | | | | | | | | |
|---|---|---|---|---|----|----|----|---|
| X | 1 | 2 | 3 | 4 | 5 | 7 | 8 | 9 |
| Y | 2 | 6 | 7 | 8 | 10 | 11 | 10 | 9 |

(or)

b) Define correlation coefficient. Calculate Spearman's rank correlation coefficient between X and Y for the following data

| | | | | | | | | |
|---|----|----|----|----|----|----|----|----|
| X | 80 | 78 | 75 | 75 | 68 | 67 | 60 | 59 |
| Y | 12 | 13 | 14 | 14 | 16 | 14 | 15 | 13 |

12. a) Define regression coefficients. Explain the properties of regression coefficients.

(or)

b) Define regression. In a partially destroyed laboratory record of an analysis of correlation data, following information is available

Variance of X=9

Regression equations : $8X-10Y+66=0$

$40X-18Y=214$

Calculate i) \bar{X} and \bar{Y}

ii) Standard deviation of y

iii) Correlation between X and Y

13. a) Define consistency . Explain the criteria of consistency.

(or)

b) Explain the coefficient of association and find the value of Q for the given data.

$(AB)=50, (A\beta)=79, (\alpha B)=89, (\alpha\beta)=782.$

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