



RAN-2008000205020002

T.Y.B.Com.(Honours) (Sem. - V) Examination December - 2025

Advanced Business Statistics Paper-V

[Total Marks: 50

સૂચના : / Instructions

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book
- (2) Figures to the right indicate full marks of the questions.
- (3) All the questions are Compulsory
- (4) Simple Calculator can be used
- (5) Usual notations are used
- (6) Statistical tables & graph paper would be supplied on request

Seat No.:

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Student's Signature

- Q. 1 (A)** Make the comparison between Sample Survey and Population Survey. (4)
- (B)** There are four observations of the population 10, 14, 20, 36. Write all possible random samples of size two drawn from it with replacement. Show that the sample mean is an unbiased estimator of population mean. Also obtain variance of the sample mean. (5)
- (C)** The observations of a population are as follows:
4, 10, 5, 7, 11, 8, 4, 1, 12, 9, 15, 7, 6, 8, 13.
Taking all systematic samples of size three verify $E(\bar{Y}_{sy}) = \bar{Y}$. Also find $V(\bar{Y}_{sy})$ (5)

- Q. 2 (A)** Explain type 1 error and Standard Error (4)
- (B)** A producer claims that 95% of the units of the total production is of good quality. A sample of 200 units is taken and inspected. 18 units are found defective. Test producer's claim at 5% level of significance. (4)
- (C)** The information obtained from the marks secured by S.Y.B.com students are shown below: (5)

Students	Mean	Std. Deviation	Sample Size
Male	83	10	121
Female	81	12	81

Test the significance of the difference of two sample standard deviation.

- Q. 3 (A)** In a random sample of 500 apples 60 found to be bad. Test the hypothesis that 8% apples are bad in the population. (5)
- (B)** The correlation coefficient for a sample of 100 pairs is 0.65. Is the value of correlation coefficient significant? (4)
- (C)** Explain how will you test the significance of the difference of means of two large samples. (4)

- Q. 4 (A)** Explain construction of np-chart. Also state its uses. (4)
- (B)** Draw reliable chart for the following data and conclude whether the production process is under control or not. (6)

Sample No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
No. of Defects	6	7	15	10	26	15	12	10	5	6	19	25	20	2	8