



RAN-2008000205020002

T.Y.B.Com. (Honors) (Sem. - V) Examination March - 2026 Business Statistics -1 (Paper - V) Advanced Business Statistics (old)

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 and graph papers would be supplied on request.

Seat No.:

Student's Signature

- Q.1.** (A) Explain merits and demerits of systematic sampling. 4
- (B) There are four observations of the population 2,5,8,9. 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 Power of the test and Standard Error. 4
- (B) In city A 60% are non-vegetarians. In another city B 50% are non-vegetarians. If samples of size 100 are taken from each of these populations, will the difference between the proportions of non-vegetarians remain hidden? 4
- (C) The information obtained from the marks secured by S.Y.B.com students is 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 sample of 100 persons of a locality 60 are found to be wheat eaters and 40 rice eaters. Can we assume that both the food articles are equally popular? 5
- (B) The correlation coefficient for a sample of 100 pairs is 0.65. Is the value of correlation coefficient significant? 4
- (C) How will you test the significance of the difference of means of two large samples? Explain. 4

- Q.4.** (A) What do you understand by np chart? Give the limits and working of np-chart. 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