2008000205020002
EXAMINATION OCTOBER 2024
BACHELOR OF COMMERCE (HONORS)
(FIFTH SEMESTER)
ADVANCED BUSINESS STATISTICS - I – LEVEL 2

[**Time: As Per Schedule]** **[Max. Marks: 50]**

Instructions:

1. **Fill up strictly the following details on your answer book**
   a. Name of the Examination : **BACHELOR OF COMMERCE (HONORS)(FIFTH SEMESTER)**
   b. Name of the Subject: **ADVANCED BUSINESS STATISTICS – I – LEVEL 2**
   c. Subject Code No: **2008000205020002**
2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.
5. Simple Calculator can be used.
6. Usual notations are used.
7. Statistical tables & graph paper would be supplied on request.

Seat No:

Student's Signature

Q.1 (A) Explain the difference between sample survey and complete enumeration **4**

(B) A population is divided into two strata and the individuals in each stratum are given below: **4**

Stratum A	10	8	9	6	12	7	11	9
Stratum B	14	13	11	15	14	10	7	12

a) Find the mean of each stratum.
b) Find the mean square of each stratum.
c) Select a sample of size n = 8 by proportional allocation.

4

(C) There are five observations of the population 5, 8, 3, 11 and 9. Write all possible random samples of size three drawn from it without replacement. Show that $E(\overline{y}) = \overline{Y}$.

Q.2 (A) Explain type I and type II error with example **4**

(B) A soft drink maker claims that a majority of adults prefer its leading beverage over that of its main competitor's. To test this claim 1000 randomly selected people were given the two beverages in random order to taste. Among them, 540 preferred the soft drink maker's brand and 460 preferred the competitor's brand. Determine whether there is sufficient evidence, at the 5% level of **4**

significance, to support the soft drink maker's claim against the default that the population is evenly split in its preference.

(C) Explain test of significance of difference of two proportions **4**

Q.3 (A) The information regarding two groups is given below. Examine whether the variability of the two groups differ significantly. **5**
$n_1 = 40, \bar{x}_1 = 1260, s_1 = 35, n_2 = 60, \bar{x}_2 = 1240, s_2 = 40$

(B) A random sample of 1000 male workers have an average weekly wage as Rs. 47 and standard deviation Rs. 28. A random sample of 1500 female workers has an average weekly wage as Rs. 49 and standard deviation Rs. 40. Can we say that the average wage of female workers is greater than that of male workers? **5**

(C) Explain significance test of proportion of success for a large sample **3**

Q.4 (A) What is SQC? explain the reason for variation in quality in detail. **5**

(B) The following table gives the number of defective items found in 15 samples each of 1000 items each: **8**
115, 217, 110, 173, 115, 164, 142, 150, 172, 154, 228, 197,142, 265, 100
Draw p chart for the following data and give your findings about the state of control.

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