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(Printed Pages 4)

(21225)

Roll No.

B.C.A.-III Sem.

18015

B.C.A. Examination, Dec.-2025

Elements of Statistics

(BCA-305)

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt **all** sections as per instructions.

Section - A

(Very Short Answer Type Questions)

Note : Attempt **all** questions. Each question carries **3** marks. Very short answer is required not exceeding 75 words.

5×3=15

1. Define the terms : (i) Population and sample (ii) Attributes and variables.
2. Describe the characteristics of a good average.

P.T.O.

3. The mean and variance of 16 observations are given by 20 and 12 respectively. Calculate the new mean and variance (i) if 4 is added to each observation (ii) If 2 is multiplied to each observation.
4. Distinguish between random causes and assignable causes in SQC.
5. Define harmonic mean with its merits and demerits.

Section - B

(Short Answer Type Questions)

Note : Attempt any **two** questions.

$$2 \times 7.5 = 15$$

6. Distinguish between defects and defectives. Explain the construction and operation of C-Chart.
7. What is probability? State the additive theorem of probability. What is the probability of the occurrence of a number that is odd or less than 5 when a fair die is rolled.

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8. Calculate standard derivation of the following:

x : 2 3 4 5 6 7 8 9 10

f : 4 6 5 3 2 1 3 7 4

Section - C

(Long Answer Type Questions)

Note : Attempt any **three** questions.

$$15 \times 3 = 45$$

9. Explain the construction and interpretation of mean chart and range chart.
10. Discuss the importance and uses of statistics in different fields.
11. What do you mean by classification and tabulation of data? Explain the importance of classification and tabulation in data management.

12. Calculate the median and mode of the following data:

Class Interval	Frequency
0-5	20
5-10	15
10-15	18
15-20	12
20-25	22
25-30	16
30-35	14
35-40	10

13. Describe Permutations and combinations.

In how many ways can 3 boys and 3 girls sit in a row :

- (i) If the boys and the girls are each to sit together?
- (ii) If only the boys must sit together?
- (iii) If no two people of the same sex are allowed to sit together?