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(21224) Roll No. .....

B.C.A. - III Sem.

18015
B.C.A. Examination, Dec.-2024
Elements of Statistics
(BCA-305)

Time : Three Hours] *[Maximum Marks : 75*

Note : Attempt questions from **All** sections as per instructions.

Section - A
(Very Short Answer Questions)

Note : Attempt **all** the five questions. Each question carries 3 marks. 3×5=15

1. Explain the finite and infinite sample space through examples.
2. Differentiate between primary and secondary data with examples.
3. Define coefficient of variation and discuss its utility.
4. Define events, Explain the concepts of Union and intersections of two events.
5. What do you mean by statistical quality control?

P.T.O.

Section - B
(Short Answer Questions)

Note : Attempt any **two** questions. Each question carries 7.5 marks.

7.5×2=15

6. Give any two definitions of Statistics. Discuss its scope in Business/Industry.
7. Define measure of Central tendency. How will you calculate arithmetic mean for grouped and ungrounded frequency distributions.
8. Define statistical definition of probability and give its limitations. Also discuss Mathematical definition of Probability defining the terms used in it. Find the probability that a leap year (contains 366 days) selected at random will contain 53 sunday.

Section - C
(Detailed Answer Questions)

Note : Attempt any **three** questions. Each question carries 15 marks. 15×3=45

9. Define classification and discuss its

different types. Differentiate between frequency distribution and cumulative frequency distribution.

10. Define the terms 'Permutation' and 'Combination' stating their applications. Compute the following :

(i) $\frac{{}^3C_1 \times {}^5C_2}{{}^8C_3} + \frac{{}^3C_2 \times {}^5C_1}{{}^8C_3} + \frac{{}^3C_3}{{}^8C_3}$

(ii) $\frac{{}^3C_2 \times {}^5C_1}{60} + \frac{{}^3C_2 \times {}^7C_1}{120} + \frac{{}^5C_2 \times {}^5C_1}{120}$

11. Define median. How will you calculate it for various types of frequency distributions. Calculate the median from the following table :

Marks	No. of Students
0-10	02
10-20	18
20-30	30
30-40	45
40-50	35
50-60	20
60-70	06
70-80	03

12. What do you mean by dispersion? Discuss its importance in data analysis and differentiate between absolute and relative measure of dispersion. Compute standard deviation for the frequency distribution given in Question No. 11.

13. Write the notes on the following :
    (a) $\bar{X}$ and R charts
    (b) p and C charts
    (c) Conditional probability and independent events