

22/2103**B.C.A. (Third Semester)****Examination, 2022**

Fifth Paper
(Elements of Statistics)

Time : 1:30 Hours]**[Maximum Marks : 75**

Note : Attempt any **five** question. **All** questions carry equal marks. The answer to given questions should not exceed 250 words each.

Note : Graph paper may be provided on demand.

1. (a) Define statistics and discuss its scope.

10

(b) Discuss the concept of population and sample.

5

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2. (a) Differentiate between attribute and variable. 5

(b) Describe cumulative frequency and draw the cumulative frequency curves from the data given below: 10

Class intervals	Frequency
0-10	12
10-20	19
20-30	26
30-40	28
40-50	17
50-60	10

3. Describe measures of central tendency and also discuss the requirements of a good measure of Central tendency. $12+3=15$

4. Find out the arithmetic, geometric and harmonic means for the values of 4 and 9 and interprete the results. $11+4=15$

2

5. Discuss relative measures of dispersion and their uses. 15
6. (a) Differentiate between experiments and random experiments. 5
- (b) Distinguish between mutually exclusive and complementary events. 5
- (c) Describe union and intersections of two events. 5
7. (a) Define probability and conditional probability. - 4
- (b) Discuss independence of two events. Find the value of $P(A \cup B)$ and $P(A/A \cup B)$ if $P(A) = \frac{1}{3}$ and $P(B) = 3/4$ 11
8. Ten coins are tossed. What are the probabilities in a single tossing of getting:
- $5+5+5=15$
- (i) Nine or more heads

- (ii) Less than 2 heads
- (iii) Exactly 5 heads
9. Describe control charts for \bar{X} and write down the steps of construction of its control limits for: $5+5+5=15$
- (i) Standard are given
- (ii) Standards are not given
10. Discuss control charts for number of defects (C-chart) limits of it in case of standards given and not given. Also explain the applications of it. $4+4+4+3=15$

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