A

Printed Pages : 4

(21119)

Roll No. .....

B.C.A.-III Sem.

18015

B.C.A. Examination, November-2019

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 *five* questions. Each question carries 3 marks. Very short answer is required not exceeding 75 words. 5×3=15

1. Define population and sample with examples.

2. What are the good measures of central tendency? Also define mean for grouped and ungrouped data.

3. What is statistical quality control ? Differentiate between process and product control.

4. What is classical definition of probability ? What is the probability of getting a sum 7 of the face values when two fair dice are thrown simultaneously ?

5. Define coefficient of variation.

Section–B

(Short Answer Questions)

Note: Answer any *two* questions out of the following three questions. Each question carries 7½ marks. Short answer is required not exceeding 200 words. 2×7½=15

6. Discuss various measures of dispersion with their merits and demerits.

7. Differentiate between defects and defective. Discuss p-chart and c-chart in detail.

8. Define permutations and combinations. A class in probability theory consists of 6 men and 4 women. An-examination is given and the students are ranked according to their performance. Assume that no two students obtain the same score.

   (a) How many different rankings are possible ?

(b) If the men are ranked just among themselves and the women among themselves, how many different rankings are possible

Section–C
(Detailed Answer Questions)

Note : Attempt any ***three*** questions out of the following five questions. Each question carries 15 marks. Answer is required in detail. 3×15=45

9. What do you mean by classification and tabulation ? Discuss their importance.

10. Define median and quantiles. Explain their uses. Calculate first and third quartiles of the following data :

Wages (in Rs.) :	60-70	50-60	40-50	30-40	20-30
No. of laboures :	5	10	20	5	3

11. Discuss additive theorem of probability. A ball is drawn at random from a box containing 6 red balls, 4 white balls and 5 blue balls. Determine the probability that it is :

(i) Red (ii) White (iii) Blue

(iv) Not Red (v) Red or White

12. Calculate mean deviation and standard deviation from the following data :

Marks :	10	20	30	40	50	60
No. of Students :	8	12	20	10	7	3

13. Discuss $\bar{X}$ and R charts with their applications in real life. Mean values and ranges of data from 5 samples (sample size = 4) are shown below :

S. No. :	1	2	3	4	5	6	7	8	9	10	11
Mean :	10	15	12	11	9	11	11	9	10	11	12
Range :	4	4	5	4	5	6	4	4	4	6	5

S. No. :	12	13	14	15
Mean :	13	12	12	11
Range :	4	4	3	3

Construct $\bar{X}$ and R charts for the above data and explain the results.