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(21216)

B.C.A.- III Sem.

Roll No.

18015

B. C. A. Examination, Dec. 2016

Elements of Statistics

(BCA-305)

(New Course)

Time : Three Hours

[Maximum Marks : 75]

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Questions)

Answer all the *five* questions. Each question carries 3 marks. Very short answer is required not exceeding 75 words. $3 \times 5 = 15$

1. What is meant by classification of data? Discuss with example.
2. Differentiate between absolute and relative measure of dispersion.
3. Define chance and assignable causes.
4. Define (i) equally likely events (ii) mutually exclusive events (iii) independent events.

5. Differentiate between specification and tolerance limits.

Section-B

(Short Answer Questions)

Answer any *two* questions out of the following three questions. Each question carries $7\frac{1}{2}$ marks. Short answer is required not exceeding 200 words. $7\frac{1}{2} \times 2 = 15$

6. Discuss the various measures of central tendency with their merits and demerits.
7. Define the classical definition of probability with its limitations. A salesman has a 60% chance of making a sale to any one customer. The behaviour of successive customers is independent. If two customers A and B enter, what is the probability that the salesman will make a sale to A or B.
8. Define statistical quality control. Discuss control charts for \bar{X} and R in detail.

Section-C

(Detailed Answer Questions)

Answer any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail. $15 \times 3 = 45$

9. Define dispersion. Calculate standard deviation of the following data :

Class interval	Frequency
5 - 10	6
10 - 15	5
15 - 20	15
20 - 25	10
25 - 30	5
30 - 35	4
35 - 40	3
40 - 45	2

10. Calculate median and mode from the following data :

Salary per day	No. of persons
1 - 5	7
5 - 10	10
10 - 15	16
15 - 20	32
20 - 25	24
25 - 30	18
30 - 35	10
35 - 40	5

11. Define permutations and combinations. A committee of 4 people is to be appointed from 4 officers of the production department, 5 officers of the purchase department, 3 officers of the sales department, and two chartered accountants. How many ways this committee can be formed :

- (i) by selecting one person from each category
- (ii) by selecting two from production department and one person from each purchase and sales department ?

12. Define control chart for number of defectives. In the manufacture of certain tanks the following data were observed :

Sample No.	Size	No. of Defectives
1	200	20
2	200	19
3	225	23
4	75	8
5	190	18
6	210	22
7	500	51
8	212	21

Draw the control chart for number of defective.

13. Discuss the various definitions of statistics. Describe the important uses and limitations of statistics.