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(21218)

Roll No.

B.C.A.-III Sem.

18015

B. C. A. Examination, Dec. 2018

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)

Attempt all the *five* questions. Each question carries 3 marks. $3 \times 5 = 15$

1. Define the following terms :
 - (i) Union and intersections of events
 - (ii) Mutually exclusive and independent events
 - (iii) Specification limits and tolerance limits.
2. Define frequency polygon and frequency curve.

3. What do you mean by process and product control ?
4. A coin is tossed three times with probability of head $1/4$ and probability of tail $3/4$. Obtain probability of getting at least one head.
5. Define permutation and combination.

Section-B

(Short Answer Questions)

Attempt any *two* questions out of the following three questions. Each question carries $7\frac{1}{2}$ marks. $7\frac{1}{2} \times 2 = 15$

6. Discuss the various measures of central tendency with their limitations.
7. What is meant by statistical quality control ? Discuss \bar{X} and R charts with their applications in industry.
8. Calculate quartile deviation of the following data :

Class Interval	Frequency
0 - 10	14
10 - 20	10
20 - 30	8
30 - 40	6
40 - 50	9
50 - 60	5
60 - 70	3
70 - 80	2

Section-C

(Detailed Answer Questions)

Attempt any *three* questions out of the following five questions. Each question carries 15 marks. $15 \times 3 = 45$

9. Explain the use of *p*-chart and *c*-chart. A bicycle manufacturer randomly selects 10 frames each day and tests for defects. The number of defective frames found over the last 14 days is 3, 2, 1, 3, 2, 2, 8, 2, 0, 3, 5, 2, 0, 4. Construct a control chart for this process and comment on whether the process is 'in control'.
10. (a) A box contains 4 chocobars and 4 icecreams. Tom eats 3 of them by randomly choosing. What is the probability that he eat 2 chocobars and 1 ice cream ?
- (b) In a class, 40% of the students study Math and Science. 60% of the students study Math. What is the probability that a student studying Science given that he/she is already studying Math ?
11. Discuss the various types of classification and tabulation of data in detail.

12. What is Statistics ? Discuss the uses of statistics in different fields.
13. Write short notes on the following :
- (i) Measure of dispersion
 - (ii) Three sigma control limits and its uses
 - (iii) Relative measure of dispersion.