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(201217) Roll No. ....

B.C.A.- III Sem.

**18015**

**B.C.A. Examination, Dec- 2017**

**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)**

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

1. What do you mean by permutation and combination. Explain with examples.
2. Differentiate between the concepts of population and sample.
3. What is the criteria of good measure of central tendency?

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4. Explain the concept of sample space with some examples.
5. Differentiate between process and product control.

**Section-B**

**(Short Answer Questions)**

**Note :** Attempt any **two** questions. Each question carries 7.5 marks.  $7.5 \times 2 = 15$

6. What do you mean by classification? Explain various types of classifications with examples.
7. Define arithmetic mean and median. State their merits and demerits. The mean age of a class of 100 students is 16.2 years. The mean age of girls is 15 years and that of boys is 17 years. Calculate the number of girls and boys in the class.
8. Define (i) Exhaustive events (ii) Mutually exclusive events and (iii) Independent events with examples. A bag contains 6 green, 7 blue and 2 red balls. 3 balls are drawn from it. Find the probability that one green, one blue and one red ball is drawn.

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**Section-C**

**(Detailed Answer Questions)**

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

9. Define mode by giving it merits and demerits. Give the steps for its calculation. Find the mode of the following frequency distribution.

Size (x)	1	2	3	4	5	6	7	8	9	10	11	12
Frequency (f)	3	8	15	23	35	40	32	28	20	45	14	6

10. What do you mean by measure of dispersion? Name various measures of dispersions. For the following data, find the standard deviation and the coefficient of variation.

Marks	No. of Students	Marks	No. of Students
0-10	5	40-50	30
10-20	10	50-60	20
20-30	20	60-70	10
30-40	40	70-80	4

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11. Define Ogive. Compute the less than and more than ogives and calculate the value of median by graphs for the following frequency distribution.

Marks	No. of Students	Marks	No. of Students
0-10	04	40-50	12
10-20	08	50-60	06
20-30	11	60-70	05
30-40	15	70-80	02

12. Differentiate between the following with examples-

- (i) Deterministic and non-deterministic experiments.
- (ii) Mathematical and statistical definitions of probability.
- (iii) Union and intersection of two or more events.

13. Differentiate between defects and defective. Discuss the control charts for

- (i) Mean ( $\bar{X}$ )
- (ii) Range (R)
- (iii) Proportion defective (p) and
- (iv) No. of defects (C)

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