C

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Roll No. _____

18/2090

B.C.A. Examination, 2018

Third Semester

Fifth Paper

(*Elements of Statistics*)

Time : Three Hours ***Maximum Marks : 75***

Note : Attempt any **five** questions. **All** questions carry equal marks.

Note : The answer to short questions should not exceed 200 words and the answers to long questions should not exceed 500 words.

1. (a) Define statistics and discuss its scope. 6

   (b) Differentiate between attribute and variable with suitable example. 4

   (c) Define classification and the basis of classification and also describe its uses. 5

P.T.O.

2. (a) Define measures of central tendency and also discuss their uses. 4

(b) The mean of ten observations was 20. If each value is multiplied by 5, then find the mean of new observations. 3

(c) Find out the geometric mean of 16 and 9. 3

(d) Define harmonic mean with suitable example. 2

(e) A man travels 20 kilometres at 40 kilometres per hour, 10 kilometres at 30 kilometres per hour and 30 kilometres at 60 kilometres per hour. Calculate the average speed. 3

3. (a) Discuss dispersion with its relative measures and uses. 5

(b) Discuss the requirement of a good measure of dispersion. 2

(c) Define variance and standard deviation. 2

(d) Calculate the variance and standard deviation of the height of ten men given below : 6

160, 160, 161, 162, 163, 163, 163, 164, 164, 170.

4. (a) Discuss deterministic and non-deterministic experiment. 4

(b) Explain sample space, event, mutually exclusive event, complementary event and exhaustive event. 5

(c) Represent through tree diagram the sample space generated by the experiment of tossing a win thrice. 3

(d) Differentiate between union and intersections of two events with suitable example. 3

5. (a) A fair coin is tossed twice. What is the probability of obtaining exactly one tail and Zero tail. 6

(b) Define conditional probability with example. 3

(c) Find the values of 6_{pr} and 5_{c2}. 6

6. (a) Define control limits and establish $3-\sigma$ control limits. 5

(b) Discuss stepwise calculation of control limits for $\bar{X}$ chart. 7

(c) Explain control chart for attributes. 3

7. Attempt any three of the following :

(a) Explain the application of C-chart. 3

(b) Distinguish between specification and tolerance limits. 3

(c) Three cards are drawn at random from a pack find the chance that they are an ace, a king and a queen. 3

(d) Discuss frequency distribution. 3

(e) Cumulative frequency and process of drawing an 0 give. 3