

Q. P. Code: 12214

(Time: 2½ Hours)

[Total Marks: 75]

- N.B.
- 1) All questions are compulsory.
 - 2) Figures to the right indicate marks.
 - 3) Illustrations, in-depth answers and diagrams will be appreciated.
 - 4) Mixing of sub-questions is not allowed.
 - 5) Use of own non-programmable calculator is allowed.

Q.1 Attempt All(Each of 5Marks)

(15M)

(a) Multiple choice questions

- i. If Covariance of X and Y is zero then Correlation coefficient will be

.....
 A. 0 B. 1 C. -1 D. None of the above

- ii. If B is subset of A then $p(A/B) =$

A. 1 B. P(A) C. P(B) D. None of the above

- iii. In greater than type ogive curve, the points are plotted for

.....
 A. the lower boundary and frequency.
 B. the upper boundary and cumulative frequency.
 C. the lower boundary and cumulative frequency.
 D. None of the above

- iv. The measure of central tendency which is affected by extreme values is

A. Mean
 B. Median
 C. Mode
 D. All the above.

- v. If the lower and upper limits of the class interval are 20 and 30 respectively then the class length will be ...

A. 10 B. 50 C. 30 D. 25

(b) Fill in the blanks

- i. Deciles divides, data into parts.
- ii. In Bar chart the height of the bar indicates
- iii. If the correlation coefficient between two variables X and Y is perfect then the correlation coefficient $r =$
- iv. For $Y = a + bx$, x is called as variable.
- v. $p(A|A') =$

(c) Short answers

- i. Write two requisites of good measure of central tendency.
- ii. Define coefficient of range.
- iii. Write two properties of regression.
- iv. Define conditional probability.
- v. Define mutually exclusive events

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40% problems and student C can solve 30% problems. Find the probability that the problem chosen from the test paper will be solved by all the three students.

- (f) In a box, there are 3 red and 2 blue balls. One ball is selected at random; its colour is noted and is discarded. Now Second ball is selected and its colour is noted. Find the probability that
- Both balls are blue
 - First is red and second is blue
 - One is red and one is blue

Q. 5 Attempt the following (Any THREE)(Each of 5Marks) (15M)

- Explain the procedure of plotting histogram.
- Write the merits and demerits of mean and Variance.
- Define skewness. Explain different types of skewness.
- Obtain Spearman's Rank correlation for the following data:-

Rank by Judge 1	6	2	4	1	3	5	10	9	8	7
Rank by Judge 2	5	1	3	4	2	6	8	10	7	9

- Define the Following with one example
 - Random Experiment with one example.
 - Sample space and Event with one example.
- A ticket is drawn from a box containing 30 tickets and a number on it is observed. Obtain the probability that ticket drawn has a number
 - Less than 6
 - Greater than 20
 - Multiple of 5
