

3. Answer the following questions (any four) :

$$12 \times 4 = 48$$

- (a) Define probability distribution, and mention the properties of binomial distribution and Poisson distribution.

- (b) A can hit a target thrice in 5 shots, B twice in 5 shots and C thrice in 4 shots. What is the probability that 2 shots hit?

- (c) Given the bivariate data :

x :	2	4	5	6	8	11
y :	18	12	10	8	7	5

- (i) Fit the regression line of y on x , and predict y when $x = 10$.

- (ii) Fit the regression line of x on y , and predict x if $y = 8.5$.

- (iii) Calculate Karl Pearson's coefficient of correlation.

- (d) Define correlation analysis and explain various types of correlation.

- (e) What is control chart? Explain various control charts.

- (f) What is a statistical hypothesis? Mention various steps for testing hypothesis.

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2019

COMMERCE

Paper : 104

(Business Statistics)

Full Marks : 80

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Answer the following as directed : $1 \times 12 = 12$

- (a) What is probability?
(b) Define exhaustive events.
(c) In how many ways can 4 books by different authors be arranged in row in the bookshelf?

(i) 32

(ii) 24

(iii) 9

(iv) None of the above

(Choose the correct option)

- (d) Define class frequency.
- (e) What is negative correlation?
- (f) What is coefficient of variation?
- (g) If the curve of regression is not a straight line, then it is called a
- linear regression
 - non-linear regression
 - simple regression
 - multiple regression
- (Choose the correct option)
- (h) Write one use of χ -chart.
- (i) Define Lorenz curve.
- (j) Student word may be used for
- z-test
 - t-test
 - F-test
 - All of the above
- (Choose the correct option)

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(Continued)

- (k) There is no relation between demand and supply; this is a
- null hypothesis
 - alternative hypothesis
 - positive correlation
 - negative correlation
- (Choose the correct option)
- (l) What is standard error?

2. Answer the following questions (any four) :

5×4=20

- Explain various approaches of probability.
- Out of 100 students in a hostel, 80 take tea, 40 take coffee and 25 take both. Find the probability of students not taking either tea or coffee.
- Explain the methods of studying association between two attributes.
- Define SQC, and explain its uses.
- Explain one-tailed and two-tailed test.
- Statistics play a vital role in managerial decision. Explain.

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(Turn Over)