

C 21201

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Name.....

Reg. No.....

FOURTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, APRIL 2022

B.Com.

BCM 4C 04—QUANTITATIVE TECHNIQUES FOR BUSINESS

(2014—2016 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A*Answer all ten questions.**Each question carries 1 mark.*

I. Choose the correct answer :

- 1 Analysis of co-variation of two or more variables is usually called :
 - (a) Skewness.
 - (b) Dispersion.
 - (c) Central tendency.
 - (d) Correlation.
- 2 X^2 value ranges _____.
 - (a) From zero to infinity.
 - (b) From - 1 to +1.
 - (c) From 0 to - 1.
 - (d) From 0 to +1.
- 3 When the variables are varying in the same direction, it is called _____.
 - (a) Linear correlation.
 - (b) Simple correlation.
 - (c) Negative correlation.
 - (d) Positive correlation.
- 4 An event whose occurrence is inevitable is called :
 - (a) Dependent event.
 - (b) Independent event.
 - (c) Uncertain event.
 - (d) Sure event.
- 5 Which is not a parametric test ?
 - (a) Z-test.
 - (b) T-test.
 - (c) F-test.
 - (d) Chi-square test.

Turn over

II. Fill in the Blanks :

- 6 _____ is a numerical value to express the extent of relationship exists between two or more variables.
- 7 _____ is a type of regression which uses one independent variable to explain and or predict the dependent variable.
- 8 _____ is a distribution obtained for a random variable on the basis of a mathematical model.
- 9 _____ is the probability distribution expressing the probability of one set of dichotomous alternatives.
- 10 _____ is an assumption made about a population parameter.

(10 × 1 = 10 marks)

Part B

*Answer any **eight** questions from the following.
Each question carries 2 marks.*

- 11 What are quantitative techniques ?
- 12 List the limitations of quantitative techniques.
- 13 What is meant by perfect positive correlation ?
- 14 What are the features of regression coefficients ?
- 15 Which are the methods of describing a set ?
- 16 Distinguish between equally likely events and mutually exclusive events.
- 17 What are the properties of probability distributions ?
- 18 What are the assumptions of binomial distribution ?
- 19 What are the uses of standard error ?
- 20 Which are the assumptions of Z-test ?

(8 × 2 = 16 marks)

Part C

Answer any **six** questions from the following.

Each question carries 4 marks.

- 21 Which are the mathematical techniques used in business decision-making ?
- 22 Give the significance of correlation analysis.
- 23 Given :

$$N = 5 \quad \bar{X} = 20 \quad \bar{Y} = 10$$

$$\sum (X - 20)^2 = 100 \qquad \sum (Y - 10)^2 = 60$$

$$\sum (X - 20)(Y - 10) = 40.$$

Find two regression equations.

- 24 Two unbiased dice are thrown. Find the probability that : (a) Both the dice show the same number ; (b) One die shows 6 ; (c) First die shows 3 ; (d) Total of the numbers on the dice is 9 ; (e) Total of the numbers on the dice is greater than 8 ; and (f) A sum of 11.
- 25 The probability that Sachin Tendulkar scores a century in a cricket match is $\frac{1}{3}$. What is the probability that out of 5 matches, he may score century in :
- (1) Exactly 2 matches.
- (2) No match.
- 26 For a binomial distribution, Mean is 6 and Standard Deviation is $\sqrt{2}$. Find the parameters.
- 27 State the procedure for testing of hypothesis.
- 28 What are the uses of Z-test ?

(6 × 4 = 24 marks)

Part D

Answer any two questions from the following.

Each question carries 15 marks.

- 29 Calculate coefficient of correlation from following data :

X ... 0 5 15 14 10 12 10 8 16 15

Y ... 20 5 12 10 8 5 6- 15 12 18

- 30 Explain the various theorems of probability.

- 31 Two random sample were drawn from two normal populations and their values are :

A : 66 67 75 76 82 84 88 90 92

B : 64 66 74 78 82 85 87 92 93 95 97

Test whether population standard deviations are equal.

(2 × 15 = 30 marks)