

17U361

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Name: .....

Reg. No.....

**THIRD SEMESTER B.B.A. DEGREE EXAMINATION, NOVEMBER 2018**

(Regular/Supplementary/Improvement)

(CUCBCSS-UG)

**CC15U BB3 C03 - QUANTITATIVE TECHNIQUES FOR BUSINESS MANGEMENT**

(Complementary Course)

(2015 Admission onwards)

Time: Three Hours

Maximum: 80 Marks

**Part A**

Answer *all* questions. Each question carries 1 mark.

1. If an increase in the value of one variable is accompanied by a decrease in the value of other variable it is called ..... Correlation
2. .... refers to the chance of happening or not happening of an event.
3. We denote the ..... by  $\emptyset$ , or  $\{ \}$
4. Number of observations in regression analysis is considered as .....
5.  ${}^{12}C_{12} = \dots\dots\dots$
6. .... refers to analysis of average relationship between two variables to provide a mechanism for prediction.  
a. Correlation      b. Regression      c. Average      d. None of these
7.  $b_{yx}$  is the regression coefficient of regression equation .....  
a. Y on X      b. X on Y      c. 0      d. None of these
8. Analysis of variance is a statistical method of comparing the ..... of several populations.  
a. standard deviations      b. mean  
c. variances      d. proportions
9. Type I error occurs when we .....  
a. reject a false null hypothesis      b. reject a true null hypothesis  
c. do not reject a false null hypothesis      d. do not reject a true null hypothesis
10. In binomial distribution, formula of calculating standard deviation is  
a. square root of p      b. square root of pq      c. square root of npq      d. square root of np

**(10 × 1 = 10 Marks)**

**Part B**

Answer any *eight* questions. Each question carries 2 marks.

11. Write a short note on scatter diagram.
12. What is correlation? Explain the implication of positive and negative correlation.
13. State the addition and multiplication theorem on probability.

14. 'Sampling is a necessity under certain conditions' Explain.
15. Explain type II error.
16. What is hypothesis testing?
17. Explain degree of freedom.
18. State assumptions in analysis of variance.
19. Explain Poisson distribution.
20. What is chi-square tests.

(8 x 2 = 16 Marks)

### Part C

Answer any *six* questions. Each question carries 4 marks.

21. Explain and distinguish between simple, partial and multiple correlation.
22. What are regression coefficients?
23. Explain Binomial distribution and its features.
24. Explain the role of quantitative techniques in business.
25. The following table gives the relative values of two variables. From these values find correlation coefficient.

X: 42	44	58	55	89	98	66
Y: 56	49	53	58	65	76	58

26. For a Binomial Distribution, mean is 6 and Standard Deviation is  $\sqrt{2}$ . Find the parameters.
27. A fruit seller, from his past experience, knows that 3% of apples in each basket will be defectives. What is the probability that exactly 4 apples will be defective in a given basket?
28. Find the number of permutations of letters in the word 'COMMUNICATION'

(6 x 4 = 24 Marks)

### Part D

Answer any *two* questions. Each question carries 15 marks.

29. Explain the steps of hypothesis testing and illustrate with a suitable example.
30. A manufacturing firm produces units of products in 4 plants, A, B, C and D. From the past records of the proportions of defectives produced at each plant, the following conditional probabilities are set:- A: 0.5; B: 0.10; C:0.15 and D:0.02 The first plant produces 30% of the units of the output, the second plant produces 25%, third 40% and the forth 5%. A unit of the products made at one of these plants is tested and is found to be defective. What is the probability that the unit was produced in Plant C?

(2)

31. From the following bivariate data, you are required to: -

- (a) Fit the regression line Y on X and predict Y if x = 20
- (b) Fir the regression line X on Y and predict X if y = 10

X:	4	12	8	6	4	4	16	8
Y:	14	4	2	2	4	6	4	12

(2 x 15 = 30 Marks)

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