

16U440

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Name: .....

Reg. No.....

**FOURTH SEMESTER B.Com. DEGREE EXAMINATION, APRIL 2018**

(Regular/Supplementary/Improvement)

(CUCBCSS - UG)

**CC15U BC4 C04 & CC16U BC4 C04 - QUANTITATIVE TECHNIQUES FOR BUSINESS**

(Complementary Course)

(2015 Admission onwards)

Time: Three Hours

Maximum: 80 Marks

**PART A**

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

I. Fill in the blanks:

1. The value of correlation between two independent events is -----
2. Standard deviation of a sampling distribution is called -----
3. ----- the set of all possible outcomes of an experiment.
4. Conditional probability deals with ----- events.
5. ----- is known as variance ratio test.

II. Choose the correct answer:

6. Correlation coefficient is the ----- average of two regression coefficients.  
a. Geometric      b. Arithmetic      c. Harmonic      d. Exponential)
7. In ----- distribution mean is greater than variance.  
a. Normal      b. Binomial      c. Poisson      d. None of these)
8. ----- probability is known as statistical probability.  
a. Classical      b. Empirical      c. Subjective      d. Axiomatic)
9. Power of the test measures ----- error.  
a. Standard      b. Probable      c. Type I      d. Type II)
10. An example for non-parametric test is -----  
a. F test      b. t test      c. Z test      d.  $X^2$  test)

**(10 x 1 = 10 Marks)**

**PART B**

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

11. Write any two properties of correlation coefficient.
12. State multiplication theorem.
13. Compare and contrast independent events with mutually exclusive events.

14. Two coins are tossed simultaneously. What is the probability of getting;
  - a. Two heads
  - b. at least one head
15. What is meant by discrete probability distribution?
16. Mean of a binomial distribution is 20 and standard deviation is 4.  
Find out the values of  $n$ ,  $p$  and  $q$ .
17. State the importance of scatter diagram in analysis of relationship.
18. Define the term 'standard normal curve'.
19. Give the mathematical expression of binomial distribution.
20. List out the main uses of chi square analysis.

(8 x 2 = 16 Marks)

**PART C**

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

21. State the underlying assumptions and properties of Karl Pearson's correlation coefficient.
22. Briefly explain various schools of thought on probability.
23. Define normal distribution. State the main properties of a normal curve.
24. Write a short note on parametric tests.
25. A problem is given to four students: A, B, C, and D and the respective probabilities of solving it by them are  $1/3$ ,  $1/4$ ,  $1/5$  and  $1/6$ . What is the probability that the problem being solved?
26. Fit a Poisson distribution to the following data:

X:	0	1	2	3
F:	123	59	14	4

27. Find out the rank correlation coefficient based on the following data

A:	90	81	80	93	95	72	91
B:	75	85	78	77	85	80	83

28. Below are given the gain in body weights of pigs fed on two diets A and B:

Diet A:	25	35	40	34	24	14	32	24
Diet B:	44	34	22	10	47	31	40	30

Test whether the two diets differ significantly with regard to their effect on increase in body weight.

(6 x 4 = 24 Marks)

**PART D**

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

29. Explain with examples the various applications of Quantitative Techniques in business.
30. Below are given the yields per acre of wheat for nine plots entering a crop competition, three plots being sown with wheat of Variety A, three with Variety B and another three with Variety C.

Variety	Yields in fields per acre		
	1	2	3
A	30	32	22
B	20	18	16
C	25	26	18

Perform Analysis of Variance and state whether there is any significant difference in the yields of three varieties of wheat.

31. A company has two plants to manufacture Scooters. Plant I manufactures 80% of the Scooters and Plant II manufactures 20%. At Plant I, 85 out of 100 Scooters are rated standard quality or better. At Plant II, only 65 out of 100 Scooters are rated standard quality or better. What is the probability that the Scooter selected at random came from Plant I if it is known that the Scooter is of standard quality? What is the probability the Scooter selected came from Plant II?

(2 x 15 = 30 Marks)

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