

**FOURTH SEMESTER B.Com. DEGREE EXAMINATION, MAY 2014**  
(UG—CCSS)

Complementary Course

BC 4C 04—QUANTITATIVE TECHNIQUES FOR BUSINESS

Time : Three Hours

Maximum : 30 Weightage

**Part A**

I. Choose the correct answer. Each bunch of four questions carry equal weight of 1. Answer questions :

✓ 1 The standard deviation of a standard normal :

- (a) 0. (b) 1.  
(c) 2. (d) 0.5.

✓ 2 The probability of sample space :

- (a) 1. (b) 0.  
(c) 0.5. (d) 0.33.

3 Regression analysis consists of \_\_\_\_\_ coefficients.

- (a) 1. (b) 2.  
(c) 3. (d) 5.

4 Scatter diagram is used in :

- (a) ANOVA. (b) Z-test.  
(c) Regression analysis. (d) Non-parametric test.

I. Fill in the blanks :

5 If the two regression lines are perpendicular, the correlation coefficient is \_\_\_\_\_.

6 For the comparison of two sample variance \_\_\_\_\_ test is used.

✓ 7 \_\_\_\_\_ is the distribution of rare events.

✓ 8 Probability of getting at least one head in tossing two coins is \_\_\_\_\_.

I. Answer in single word :

9 Name the error occurred when rejecting the true hypothesis.

✓ 10 A binomial variable has mean 4 and variance 2, find P ?

11 The large sample test using, which distribution.

✓ 12 Given A and B are independent events with  $P(A) = 1/3$  and  $P(B) = 1/4$ . Find  $P(A \cap B)$ .

(12 × 1/4 = 3 weightage)

Turn over

**Part B**

V. Answer *all nine* questions. Each question carries a weightage of 1 :

- 13 Define Correlation.
- 14 What are properties of regression coefficients ?
- ✓ 15 Distinguish sample space and event.
- ✓ 16 Define classical probability.
- ✓ 17 What is meant by standard normal curve ?
- 18 State the procedure for testing hypothesis.
- 19 How to test small sample mean ?
- ✓ 20 State the characteristics of binomial distribution.
- ✓ 21 Name the classification of quantitative techniques.

(9 × 1 = 9 weightage)

**Part C**

Answer any *five* questions. Each question carries a weightage of 2 :

- 22 Differentiate Karl Pearson's coefficient of correlation and Spearman's rank correlation.
- ✓ 23 A subcommittee of 6 members is to be formed out of a group consisting of 7 men and 4 women. Obtain the probability that the subcommittee will consists of (i) Exactly 2 women ; and (ii) Atleast 2 women.
- ✓ 24 Define conditional probability. What is the effect of independence in conditional probability ?
- 25 What is meant by a Poisson distribution ? How does it arise in practice ? Explain with suitable example.
- ✓ 26 The mean and variance of a binomial variable are 16 and 8. Write down the binomial density function.  
 $D, n, P(x)$
- 27 Explain the method of testing the significance of the two large sample means.
- ✓ 28 Write the applications of quantitative techniques in business.

(5 × 2 = 10 weightage)

**Part D**

Answer any *two*. Each question carries a weightage of 4 :

29 From the following data form two regression lines :

X :	36	23	27	28	28	29	30	31	33	35
Y :	29	18	20	22	27	21	29	27	29	28

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- 30 John has 15 pairs of socks on a drawer of which 5 are red, 4 are brown and 6 are white. Pairs of the same colour are indistinguishable. 2 red pair and 1 white pair are unwearable because of holes in the toe. He selects a pair of socks from drawer and note that it is red. What is the probability that it has holes in the toe ?
- 31 The following table gives the yield of three strains of wheat cultivated in five identical plots each. Examine whether there is any indication of strains differing in yield using ANOVA :

A :	20	21	23	16	20
B :	18	20	17	15	25
C :	25	28	22	28	32

(2 × 4 = 8 weightage)