

**FOURTH SEMESTER B.Com. DEGREE (UG—CCSS) EXAMINATION  
MAY 2015**

(SDE)

Complementary Course

BC 4C 04—QUANTITATIVE TECHNIQUES FOR BUSINESS

Time : Two Hours and Forty-Five Minutes

Maximum : 27 Weightage

*Answers should be written in English.*

**Part B**

SECTION A

*Answer all **nine** questions in **one** or **two** sentences each.  
Each question carries a weightage of 1.*

NEN

- ✓ 1. What is a standard normal curve ?
2. What is meant by statistical inference ?
3. What is standard error ?
4. What is Type II error ?
5. Distinguish between statistic and parameter.
6. What is a sampling distribution ?
7. State the law of statistical regularity.
- ✓ 8. What is sample space ?
- ✓ 9. What is conditional probability ?

(9 × 1 = 9 weightage)

SECTION B

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

0. Explain the limitations of quantitative techniques.
1. What are the properties of regression co-efficient ?

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12. What is Chi-square test ? What are its uses ?

13. Calculate Karl Pearson's co-efficient of correlation from the following data : ✓

0.938

X	:	100	200	300	400	500	600	700
Y	:	30	50	60	80	100	110	130

14. In a sample of 10 observations the sum of the squared deviations of items from the mean was 101.7. In another sample of 8 observations the value was found to be 94.5. Test whether the difference is significant at 5% level.

15. A basket contains 20 bad oranges and 80 good oranges. Three oranges are drawn at random from the basket. Find the probability that of three (a) at least 2, and (b) utmost 2 are good oranges.

16. A person is known to hit the target in 3 out of 4 shots, whereas another person is known to hit the target in 2 out of 3 shots. Find the probability of the target being hit at all when they both try.

(5 × 2 = 10 weightage)

SECTION C

Answer any two questions.

Each question carries 4 weightage.

Handwritten notes:  $\sigma = \sqrt{\frac{\sum (x - \bar{x})^2}{n}}$ ,  $\sigma = \sqrt{\frac{\sum (y - \bar{y})^2}{n}}$

17. Explain the importance of quantitative techniques in business, industry and management.

18. An intelligence test on two groups of boys and girls give the following results :

	Mean	S.D.	N
Boys ..	70	20	250
Girls ..	75	15	150

Handwritten notes: Boy X, Girl Y,  $\bar{x} = 70$ ,  $\sigma = 20$ ,  $\bar{y} = 75$ ,  $\sigma = 15$ ,  $n_1 = 250$ ,  $n_2 = 150$

Is there a significant difference in the mean scores obtained by boys and girls ? Test at 5% level of significance.

19. Two groups of 100 people each were taken for testing the use of vaccine. 15 persons contracted the disease out of the inoculated persons, while 25 contracted the disease in the other group. Test the efficacy of the vaccine. Use chi-square.

(2 × 4 = 8 weightage)

$N_1 = 100$      $N_2 = 100$   
 $\bar{X}_1 = 15$      $\bar{X}_2 = 25$

$3 \times 4 = 12$