FOURTH SEMESTER B.Com. DEGREE (U.G.—CCSS) EXAMINATION MAY 2014

(SDE)

BC 4C 04—QUANTITATIVE TECHNIQUES FOR BUSINESS

Time : Two Hours and Forty-five Minutes   Maximum : 27 Weightage

Students should write the examination in English only.

Part B

SECTION A

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

1   What is positive correlation ?

2   Define probability.

3   What is meant by 'equally likely event' ?

4   What is conditional probability ?

5   What are regression lines ?

6   What is a standard normal curve ?

7   What is type I error ?

8   What is meant by hypothesis ?

9   What is a random variable ?

$(9 \times 1 = 9 \text{ weightage})$

SECTION B

Answer any *five* questions. Answer not to exceed *one page* each. Each question carries a weightage of 2.

10   Explain the scatter diagram method of studying correlation.

11   What are the limitations of quantitative techniques ?

12   It is claimed that a random sample of 100 tyres with mean life of 15269 km is drawn from a population of tyres which has a mean life of 15200 km and standard deviation of 1248 km. Test the validity of the claim.

13   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.

Turn over

14 Find the rank correlation coefficient for the following data :

X : 68 64 75 50 64 80 75 40 55 64

Y : 62 58 68 45 81 60 68 48 50 70

15 Two regression equations are given below. Find the mean of X and Y variables and correlation coefficient between X and Y.

X on Y equation : $3Y - 2X - 10 = 0$

Y on X equation : $2Y - X - 50 = 0$.

16 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 of significance.

$(5 \times 2 = 10 \text{ weightage})$

SECTION C

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

17 Explain the properties of a normal distribution.

18 The following table gives the aptitude test scores and productivity indices of 10 workers selected at random.

X (score) : 60 62 65 70 72 48 53 73 65 82

Y (Indices) : 68 60 62 80 85 40 52 62 60 81

Obtain the two regression equations and estimate the productivity index of a worker whose test score is 92.

19 Two unbiased dice are thrown. Find the probability that :

(a) Both the dice show the same number.

(b) One die shows 5.

(c) First die shows 5.

(d) Total of the numbers of the dice is 8.

$(2 \times 4 = 8 \text{ weightage})$