FOURTH SEMESTER B.Com. DEGREE EXAMINATION, JUNE 2012

(CCSS)

BC4 CO4—QUANTITATIVE TECHNIQUES FOR BUSINESS

(2010 Admissions)

Time : Three Hours   Maximum : 30 Weightage

Part A

This part contains **three** *bunches of questions carrying equal weightage. Each bunch has* **four** *questions. Answer* **all twelve** *questions.*

A. Fill in the blanks :

1 Two variables are said to be ————— if the change in one variable results a Corresponding change in the other variable.

2 ————— analysis helps to understand how the value of the dependent variable changes when any one of the independent variable is variate.

3 The outcome of a random experiment is called —————.

4 A normal curve with zero mean and unit standard deviation is termed as —————.

B Choose the correct answer from the bracket :

5 The values of probability lie between :

    (a) 0 and – α.   (b) 0 and 1.

    (c) Greater than 1.   (d) None of these.

6 Poisson distribution is the limiting form of :

    (a) Normal distribution.   (b) Frequency distribution.

    (c) Binomial distribution.   (d) Chi-square distribution.

7 The % area under Normal curve covered by Mean $\pm$ 1. Standard deviation is

    (a) 34.135.   (b) 95.45.

    (c) 68.27.   (d) 47.725.

8 Standard deviation of a sampling distribution is called :

    (a) Sigma.   (b) Mean.

    (c) Standard Error.   (d) Variance.

Turn over

C. Answer in *one* word :

9 If two variables are moving and varying in the same direction ; Correlation is said to be :

10 Normal distribution is graphically represented by :

11 The set of all the sample points of a random experiment is called as :

12 Rejection of a null hypothesis when it is true is referred to as :

(12 × ¼ = 3 weightage)

Part B

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

13 What do you mean by Quantitative Techniques ?

14 Define Probability.

15 Define Correlation.

16 What do you mean by Multiple Regression ?

17 What do you mean by Combination ?

18 State the addition theorem of Probability.

19 What is a discrete random variable ?

20 What are the parameters of a binomial distribution ?

21 What is a Non-parametric test ?

(9 × 1 = 9 weightage)

Part C

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

22 What are the major types of Quantitative techniques used in business. Explain.

23 The ranking of 10 individuals at the start and finish of a training programme are as follows :

Individuals	A	B	C	D	E	F	G	H	I	J
Rank before :	4	8	10	7	2	5	9	3	6	1
Rank after :	1	4	9	5	10	7	2	3	8	6

Calculate Spearman's Rank Correlation Coefficient

24 For 17 observations on price (X) and quantity supplied (Y), the following data were obtained : $\sum X = 544$. $\sum X^2 = 19040$; $\sum Y = 244$; $\sum Y^2 = 3773$; $\sum XY = 8413$. Obtain the equations of the two regression in lines.

25 A Committee of 5 is to be formed from a group of 8 boys and 7 girls. Find the probability that the Committee consists of (a) 3 boys and 2 girls. (b) at least one girl.

26 The probability that a batsman scores a century in a Cricket match is $\frac{1}{3}$. Find the probability that out of 5 matches ; he may score century in (a) exactly 2 matches. (b) No match.

27 Between the hours of 2 p.m. and 4 p.m, the average number of telephone calls per minute coming into the switch board of a Company is 2.5. Find the probability that during one particular minute, there will be (a) Exactly 2 calls. (b) No phone calls at all.

28 The Weekly Wages of 1000 workers are normally distributed around a mean of Rs.700 and with a standard deviation of Rs.50. Estimate the number of workers whose weekly wages will be

(a) between Rs.700 and Rs.720 and

(b) between Rs.690 and Rs.720.

(5 × 2 = 10 weightage)

Part D

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

29 What is hypothesis testing ? Enumerate the steps in testing of hypothesis.

30 Following Table gives the result of the SSLC Examination held in 2008 :

Age of Candidates :	21	20	19	18	17	16	15	14	13
% Failure :	55	47	49	39	37	34	43	41	39

Calculate Coefficient of Correlation and estimate Probable error.

From the result can it be definitely asserted that failure is correlated with age ?

31 Three persons X, Y and Z are simultaneously shooting at a target. Probability of X hitting the target is $\frac{1}{2}$, B hitting the target is $\frac{1}{4}$ and that of Z hitting is $\frac{2}{3}$. Find the probability (a) exactly one of them will hit the target and (b) at least one of them will hit the target.

(2 × 4 = 8 weightage)