

**FOURTH SEMESTER B.COM
DEGREE EXAMINATION, JUNE - 2012
(CCSS)
BC4 CO4 - QUANTITATIVE TECHNIQUES
FOR BUSINESS**

Time: 3 hrs.

Maximum: 30 marks

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 varied.
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 -1 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) 34.185 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

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 x 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 x 1 = 9 weightage)

Part C

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

22. What are the major type 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 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 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 x 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

31. Three persons X, Y and Z are simultaneously shooting at a target. Probability of X hitting the target is $\frac{1}{2}$, Y 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 x 4 = 8 weightage)