



CII Institute of Logistics

PGDSCM & Certificate Programs
Semester-end Examination – December 2008

QUANTITATIVE TECHNIQUES

Time : Three Hours

Marks : 100

Part A

Answer all questions (20 x 1 = 20 Marks)

1. The coefficient of variation is an absolute measure of dispersion
True/ False
2. We can compute mean for any data set once we are given its frequency distribution
True/ False
3. The cofactor matrix is the set of numbers that remain after a given row and column are removed from a matrix
True/ False
4. Histogram is the graphical representation of frequency distribution
True/ False
5. Quantitative models always produce a precise accurate solution
True/ False
6. The value that has the maximum frequency in the data set is called _____
7. If one event is not affected by the outcome of another event, the two events are said to be _____
8. A curve drawn for cumulative frequency distribution is called _____
9. The correlation coefficient must be between _____
10. The equally likely criteria in decision making is called _____
11. The mode is the value that is repeated most often in dataset
True/ False
12. A graph of a cumulative frequency distributes is called _____
13. A _____ is a collection of all the elements in a group

14. The extent to which value in a distribution are grouped to gather is a measure of _____
15. The expression of standard deviation as a percentage of the mean is the _____
16. Fractiles that divide the data into 100 equal parts are called _____
17. The measure of the average squared distance between the mean and each item in the population is the _____
18. The value most often repeated in a data set is called the arithmetic mean
True/ False
19. The standard deviation is the square root of the variance.
True/ False
20. The probability of one event occurring given that another event has occurred already is called _____ probability

Part B

Answer any four (4 x 10 = 40 marks)

1. Explain the different types of Price index numbers and how we can construct them.
2. Explain the purpose and methods of classification of data giving suitable examples.
3. From the following data obtain the correlation coefficient & two regression equations.
Sales: 81 87 98 101 57 131 90
Purchase: 61 65 52 50 44 99 72
4. Explain the principles of DBMS.
5. Four coins are tossed simultaneously. What is the probability of getting (a). 2 heads and 2 tails.
(b). at least 2 heads. (c). at least one head.
6. Explain different sampling methods.

Part C

Answer any four (4 x 10 = 40 Marks)

1. Calculate Weighted Relative Price index no.

Commodity	Base year value	Current year price	Current year quantity
Bread	300	Rs. 10/- per loaf	500
Milk	500	Rs. 15/- per litre	600
Butter	240	Rs. 100/- per Kg	4

2. A sub committee of 6 members is to be formed out of a group of 7 men and 4 women. What is the probability that the sub committee will consist of
(i) exactly 2 women. (ii) at least 2 women.
3. Recently many companies have started using inventory turnover ratio as an important measure for supply chain performance. It is defined as the ratio of annual sales to average inventory level. The definition implies that an increase in inventory turnover leads to a decrease in average inventory levels.

For instance, retailing powerhouse Wal-Mart has the highest turnover ratio of any discount retailer. This suggests that Wal-Mart has a higher level of liquidity, smaller risk of obsolescence and reduced investment in inventory. Of course, a low level of inventory in itself is not always appropriate since it increases the risk of lost sales. A recent survey of industry practices gives the following details:

Inventory turnover ratio for different manufacturers:

Industry	Upper quartile(Q1)	Median	Lower quartile (Q3)
Electronic components	8.1	4.9	33.3
Computers	22.7	7.0	2.7
Audio and video	6.3	3.9	2.5

Paper mills	11.7	8.0	5.5
Industrial chemicals	14.1	6.4	4.2
Bakery Products	39.7	23.0	12.6
Publishing and Printing	7.2	2.8	1.5

Comment on the performance of these industries in terms of inventory turnover ratio. Use of statistics and calculations are must.

4. For the following frequency distribution, determine

- (a) The median class.
(b) The number of the item that represents the median
(c) The width of the equal steps in the median class.
(d) The estimated value of the median for these-data.

Class interval	Frequency
100 – 149.5	12
150 – 199.5	14
200 – 249.5	27
250 – 299.5	58
300 – 349.5	72
350 – 399.5	63
400 – 449.5	36
450 – 499.5	18

5. Write short notes on

(a). Decision trees.

(b). Three probability distribution.

6. Calculate Quartile derivative for the data

Sl. NO	Ordered data
1	153
2	191
3	220
4	235
5	139
6	139
7	141
8	166
9	184
