



(AL)

MBA 105

I Semester M.B.A. (Master of Business Administration)

Examination, August 2011

QUANTITATIVE TECHNIQUES

Time : 3 Hours

Max. Marks : 80

SECTION – A

(5×6=30)

(All questions are **compulsory**. Each question carries **equal** marks.)

1. Define sampling and its methods. Explain the different methods of sampling.
2. The following table gives the distribution of marks obtained by 90 students in an examination :

Class	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
Frequency	4	10	20	35	15	6

Calculate the coefficient of variation.

3. What is a questionnaire ? How does it differ from a blank form ?
4. What is normal distribution ? Explain its properties.
5. What do you understand by time series analysis ? Explain the various factors affecting in the time series with suitable examples.

SECTION – B

(10×5=50)

(Attempt **any five** questions. Each question carries **equal** marks.)

6. Explain the following :
 - a) Probable error
 - b) Correlation coefficient
 - c) Rank correlation
 - d) Scatter diagram.
7. It is given that 2% of the screws manufactured by a company are defective. Use Poisson distribution to find the probability that a packet of 100 screws contains :
 - i) No defectives screws
 - ii) Two or more defectives.

P.T.O.



8. What are the measures of dispersion ? Discuss four important measures of dispersion.
9. State and explain the :
- Random sampling
 - Sampling errors
 - Grouped frequency distributions.
10. If the regression lines are $3Y + 9X = 46$ and $3X + 12Y = 19$, determine which one of these is the regression in line of Y on X and which is that of X on Y. Also find the means correlation coefficient and ratio of variances of X and Y.
11. A computer while calculating the correlation coefficient between two variables X and Y, obtain the following constants :
- $N = 30, \sum X = 120, \sum X^2 = 600, \sum Y = 90, \sum Y^2 = 250, \sum XY = 356$. It was however, later discovered at the time of checking that it had copied down two pairs of observations as :
- | | |
|----|----|
| X | Y |
| 8 | 10 |
| 10 | 7 |
- While the correct values were :
- | | |
|----|----|
| X | Y |
| 8 | 12 |
| 10 | 8 |
- Obtain the correct value of the correlation coefficient between X and Y.

12. Calculate the trend values using 3-yearly moving average from the following data :

Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Sales (in Lakhs)	7	8	9	11	10	12	8	6	5	10

13. A) Two dice are tossed. Find the probability that the sum of dots on the faces that turn up is
- sum is 8
 - sum is 11
 - greater than 6
 - greater than 5 and less than 10.
- B) State and prove Baye's theorem.
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