

EXECUTIVE MBA (EXMBA)

Term-End Examination

June, 2013

MCT-053 : QUANTITATIVE TECHNIQUES

Time : 3 hours

Maximum Marks : 100

Note : Answer **any five** questions. All questions carry equal marks.

1. (a) Find the median for the following 10 distribution :

Gross profit as a % of sales.	0 - 5	5 - 10	20 - 30	30 - 40	40 - 50
No. of companies.	22	38	46	35	20

- (b) Quartiles are those values of the variable 10 that divide the total frequency into four equal parts. Explain with the help of a suitable example.
2. (a) From the following data, find the regression 10 line of y on x .

x	1	2	3	4	5	8	10
y	9	8	10	12	14	16	15

- (b) Explain about the Regression line, Regression Equations and Regression Coefficient. 10
3. (a) For what value of x 20
 $f(x) = x^2 + 3x - 2$ satisfy the equation
 $f(x) = f(2x)$
- (b) If $f(x) = \log x$, show that
- (i) $f(ab) = f(a) + f(b)$ and
- (ii) $f\left(\frac{a}{b}\right) = f(a) - f(b)$
- (c) If $f(x) = \frac{1}{1-x}$, prove that $f[f\{f(x)\}] = x$
4. (a) From the following data, calculate Karl Pearson's coefficient of correlation : 10
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|-------|---|---|---|---|----|----|----|
| $x :$ | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| $y :$ | 4 | 7 | 8 | 9 | 10 | 14 | 18 |
- (b) Explain the following term : 5+5=10
- (i) Co-variance
- (ii) Spearman's Rank Correlation Method
5. (a) What is the importance of sampling method ? Explain it's merits and demerits. 10
- (b) Differentiate between Census and Sampling method. 10

6. (a) How do you explain the permutation, combinations and its Relevance to probability ? 10
- (b) An auditor has to examine account of five companies. Determine the number of different alternatives in which he can complete his task. 10
7. (a) Briefly comment on the following statement:
- (i) An ironic (physical) model is a physical representation of some item either in an idealised form or on a different scale. 5+5=10
- (ii) Data collection is infact, the most important aspect of statistical survey.
- (b) Distinguish between the following : 5+5=10
- (i) Simulation versus Non-simulation
- (ii) Binomial Distribution Vs. Poisson Distribution
8. Write **short notes** on the following : 20
- (a) Scatter Diagram
- (b) Events
- (c) Skewness
- (d) Random Variable
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