

MMPC-005

Qualitative Analysis for Managerial Applications

Duration: 3 hours

Maximum marks : 100

Q1. Answer any five questions from the following:- (5×4)

- a) Discuss any one method of collecting primary data.
- b) Define Bernoulli process.
- c) What do you understand by purposive sampling?
- d) What is null hypothesis?
- e) Why is forecasting so important in business?
- f) What is linear regression?
- g) From some financial statistics, it is found that the monthly average electricity charges were Rs. 2460 and SD is Rs. 120. The monthly average direct wages were Rs. 42000 and SD is Rs. 1200. State which is more variable with proper reason.

Q2. Answer any five questions from the following:- (5×10)

- a) Discuss the mathematical properties of Median.
- b) Explain decision tree approach in brief.
- c) Describe some reasons which make sampling a desirable approach.
- d) Explain the use of auto-correlations in identifying Time Series.
- e) Find the coefficient of correlation from the following data:+

Fertilizer used(in	15	18	20	24	30	35	40	50
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metric tones)								
Productivity (in metric tones)	85	93	95	105	120	130	150	160

- f) Find the mean deviation about mean from the following data:-
10,15,18,20,20,22,23,25,27,30
- g) Write the properties of normal distribution.

Q3. Answer any two questions from the following:- (2*15)

- a) Distinguish between Karl Pearson's and Bowley's coefficient of skewness. Which one would you prefer and why?
- b) The following figures show the distribution of digits in number chosen at random from a telephone directory:-

Digits	0	1	2	3	4	5	6	7	8	9
Frequency	1026	1107	997	996	1075	933	1107	972	964	853

Test whether the digits may be taken to occur equally frequently in the directory. (Tabulated value of chi-square at 9 degrees of freedom at 0.05 level of significance is 16.92)

- c) There are 600 business students in the PG department of a university and the probability of any student to need a particular book of Operation Research from the library on any day is 0.05. How many copies of the book should be kept in the library so that the probability may be greater than 0.90 that none of the students needing a copy from the library has to go disappointed? (Use normal approximation to the binomial probability law). (Corresponding value of z from the table is 1.28).