

MATHEMATICS

Elementary idea of A.P, C.P. and H.P Permutation and Combinations

~~Binomial~~ Binomial, Logarithmic and Exponential Series, set theory - definitions, union, intersection and difference, of sets.

Variables, functions and Graphs - Differentiation and integration functions.

Elementary idea of Determinantes, Matrices and vectors up to purchase of two vectors.

CO-ordinates, st. Lines, Pair of st. lines

STATISTICS

Statistics - its meaning, nature, scope, limitation and importance. in business and economics:-

Collection of Data, definition of the unit of investigation, Census and sample survey. Direct and indirect personal investigation, investigation on the basis of existing documents errors in collection of statistics. preparation of questionnaires and schedules.

Sample Survey - Population, sampling units and sampling variance. Concept of Purposive and Probability sampling. Simple random sampling, Stratified random sampling systematic sampling two stage sampling and cluster sampling.

Graphic Representation of Data - Histograms, bar chart and pie chart, frequency polygon, frequency curve, ogive of less than and more than types: -

Measure of central Tendency - Arithmetic mean, geometric mean, harmonic mean, weighted averages, median, mode, quartiles, deciles and percentiles, their relative importance and ~~and~~ limitation.

Measures of Dispersion - Range, mean deviation, quartile deviation, standard deviation, Co-efficient of skewness, and ~~mean~~ moments.

Correlation - its meaning uses and types: Degrees of Correlation and its nature. Product moment correlation and rank correlation.

### Books Recommended.

- (1) Dr. B. N. Gupta - Business Math and Statistics (S.B.P.D)
- (2) Asthana B. N. - Elements of Statistics
- (3) Shukla and Gulben - Principles of Statistics
- (4) Singh S. P. - Sankhiyake Sidhant evan byavhar.

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