

Syllabus for MCA Entrance Examination

MATHEMATICS

a. Number system

Sets and relations, Real numbers and complex numbers

b. Permutations and combinations

Fundamental principle of counting, Meaning of $P(n,r)$ and $C(n,r)$, Relation between $P(n,r)$ and $C(n,r)$; simple applications.

c. Binomial theorem

Binomial theorem for positive integral indices, simple results.

d. Sequences and series

Arithmetic, Geometric and Harmonic progressions, Relation between A.M, G.M and H.M, Exponential and logarithmic series.
Special series $\sum n$, $\sum n^2$.

e. Differential calculus

Functions, graphs of simple functions, Limits, Continuity, differentiation of simple functions, maxima and minima of functions of one variable, even and odd functions.

f. Integral calculus

Fundamental integrals involving algebraic, trigonometric, exponential and logarithmic functions

g. Differential Equations

Ordinary differential equations, their order and degree, solutions of differential equations by the method of separation of variables

h. Co-ordinate geometry in two dimensions

Rectangular co ordinates, straight lines, and circles.

i. Matrices and determinants

Determinants and matrices of order two and three, properties of determinants, evaluation of determinants, addition and multiplication of matrices, adjoint and inverse of matrix.

j. Statistics and probability theory

Mean, median and mode of grouped and ungrouped data, standard deviation, variance and coefficient of variation, probability, addition and multiplication theorems, conditional probability, binomial and poisson distributions.

k. Quadratic equation

Quadratic equations in real number system and their solutions _ Relation between roots and coefficients, formation of quadratic equations with given roots.

GENERAL ENGLISH

TEST OF REASONING