

# PUNE UNIVERSITY

PUNE

## MASTER OF COMPUTER APPLICATIONS (MCA)

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### Eligibility :

Bachelor's degree in any discipline with a minimum 50% marks for open category candidates and minimum passing marks for reserved category candidates.

### Examination Pattern :

The entrance examination consists of multiple choice (Objective type) questions, and covers the areas of Mathematics, General Aptitude and English Language. It will consist of the following two parts :

- (i) Quantitative and Mathematical Ability
- (ii) Deductive and Logical Ability

### SYLLABUS :

#### (A) Mathematics

**Set theory.** Set operations, relations, functions.

**Propositional logic :** Formulation, deduction, evaluation, puzzles.

**Linear Algebra :** Solution of a system of linear equations. Determinant and inverse of a matrix, basic properties of matrices.

**Co-ordinate Geometry and Conic Sections :** Equations of lines and planes, vector products, definitions and properties of conic sections.

**Trigonometry :** Identities, computation of heights and lengths.

**Differential Calculus :** Total and partial differentiation, limit of a function.

**Integral Calculus :** Definite and indefinite integrals, solution of differential equations, computation of areas and volumes.

**Real and complex numbers :** Surds, solution of equations on complex domain.

**Polynomials :** Solution of quadratic equations, properties of roots of polynomials with real coefficients, binomial expansion, Taylor series.

**Permutations and Combinations.**

**Elementary Probability Theory :** Computing probability from combinatorial reasoning, conditional probability.

### Time Duration :

The total time for this examination is 3 hours.

**NIMS**  
**KANPUR**

**M.C.A. Entrance by RAM GOPAL SINGH**

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