UTTARAKHAND STATE ENTRANCE EXAMINATION

(UKSEE)

Conducted by :

Uttarakhand Technical University, Dehradun

MASTER OF COMPUTER APPLICATIONS (MCA)

Eligibility :

Graduate in any discipline with Mathematics at 10 + 2 level. Those appearing final year of graduation, may also apply.

Examination Pattern :

1. The question paper will comprise of 100 objective type questions which are to be answered in 02 hours time.
2. All questions will have 04 response (alternatives), out of which only one will be the correct answer.
3. The candidate has to choose the response which in his/her opinion is the correct answer and should mark that in the OMR answer sheet to score full marks.
4. Each correct answer will be awarded 1 mark.
5. If a question has not been attempted no mark will be awarded.

SYLLABI FOR ADMISSION TEST :

(i) MATHEMATICS

Modern Algebra: Idempotent law, identities, complementary laws, Demorgan's theorem, mapping, inverse relation, equivalence relation, Piano's Axiom, definition of rational numbers and integers through equivalence relation

Algebra: Surds, solution of simultaneous and quadratic equations, arithmetic, geometric and harmonic progression, Binomial theorem for any index, logarithms, exponential and logarithmic series, determinants.

Probability: Definition, dependent and independent events, numerical problems on addition and multiplication of probability, theorems of probability.

Trigonometry: Simple identities, trigonometric equations, properties of triangles, use of mathematical tables, solution of triangles, height and distance, inverse functions, DeMoiver's theorem.

Co-Ordinate Geometry: Co-ordinate geometry of the straight lines, pair of straight lines, circle, parabola, ellipse and hyperbola and their properties.

Calculus: Differentiation of function of functions, tangents and normal, simple examples of maxima of minima, limits of function, integration of function by parts, by substitution and by partial fraction), definite integral (application to volumes and surfaces of frustums of sphere, cone and cylinder).

Vectors: Position vector, addition and subtraction of vectors, scalar and vector products and their applications.

Dynamics: Velocity, composition of velocity, relative velocity, acceleration, composition of acceleration, motion under gravity, projectiles, laws of motions, principles of conservation of momentum and energy, direct impact of smooth bodies, pulleys.

Statics: Composition of co-planar, concurrent and parallel forces, moments and couples, resultant of set of coplanar forces and conditions of equilibrium, determination of Centroides in simple case, problems involving friction.

(ii) STATISTICS: Theory of probability, Mean, Median, Mode, Dispersion and Standard Deviation.

(iii) LOGICAL ABILITY: Questions to test analytical and reasoning capability of candidates.