ENTRANCE EXAM PATTERN OF RGIPT SIVASAGAR CAMPUS

DIPLOMA ADMISSION TEST (DAT-2026)

The RGIPT Sivasagar Campus Diploma Admission Test (DAT-2026) will consist total **100 multiple choice questions (MCQs)**, each carrying one mark. All questions will have only one correct option. The total marks for the examination will be 100. For every incorrect answer, **0.25 marks will be deducted** as part of the negative marking scheme, while no marks will be awarded or deducted for unanswered questions. The total duration of the examination will be **2 hours**. The syllabus is detailed below:

Part	Subject	No. of Question
I	Mental Ability Test	**15**
II	Mathematics	**35**
III	General Science (excluding biology)	
A	Chemistry	**25**
B	Physics	**25**
Total Marks		**100**

Syllabus

Part - I

MENTAL ABILITY TEST

1.	Series	**9.**	Time and Clock
2.	Analogy	**10.**	Missing Character
3.	Coding-Decoding	**11.**	Non-Verbal Series
4.	Number and Ranking	**12.**	Non-Verbal Classification
5.	Blood Relation	**13.**	Mirror and Water Images
6.	Mathematical Operations	**14.**	Cube and Dice
7.	Direction Sense	**15.**	Puzzle Test
8.	Venn Diagrams		

Part – II

MATHEMATICS

Chapter	Content	Key Concepts
Chapter 1	Number Systems	**1. Real Numbers** Euclid's division lemma, Fundamental Theorem of Arithmetic-statements after reviewing work done earlier and after illustrating and motivating through examples. Proofs of results-irrationality of √2, √3, √5, decimal expansions of rational numbers in terms of terminating/non-terminating recurring decimals.
Chapter 2	Algebra	**1. Polynomials** Zeros of a polynomial, relationship between zeros and coefficients of a polynomial with particular reference to quadratic polynomials, statement and simple problems on division algorithm for polynomials with real coefficients. **2. Pair of Linear Equations in Two Variables** Pair of linear equations in two variables, geometric representation of different possibilities of solutions/ inconsistency, algebraic conditions for number of solutions. Solution of pair of linear equations in two variables algebraically-by substitution, by elimination and by cross multiplication. **3. Quadratic Equations** Standard form of a quadratic equation $ax^2 + bx + c = 0$. Solution of quadratic equations (only real roots) by factorization and by completing the square, i.e. by using

		quadratic formula. Relationship between discriminant and nature of roots. **4. Arithmetic Progressions (AP)** Motivation for studying A.P. Derivation of standard results of finding the n^{th} terms and sum of first n terms.
Chapter 3	Trigonometry	**1. Introduction to Trigonometry** Trigonometric ratios of an acute angle of a right-angled triangle. Values of the trigonometric ratios of 30^o, 45^o and 60^o. Relationship between the ratios. Trigonometric Identities: Applications of the identity $\sin^2 A + \cos^2 A = 1$, $\sec^2 A - \tan^2 A = 1$, $\text{cosec}^2 A - \cot^2 A = 1$. Only simple identities to be given. Trigonometric ratios of complementary angles. **2. Heights and Distances** Simple and believable problems on heights and distances. Angles of elevation/depression should be only 30^o, 45^o, 60^o.
Chapter 4	Coordinate Geometry	**Lines (In two-dimensions)** Review the concepts of coordinate geometry including graphs of linear equations. Awareness of geometrical representation of quadratic polynomials. Distance between two points and section formula.
Chapter 5	Geometry	**1. Triangles** Definitions, examples, area of a triangle, counter examples of similar triangles. **2. Circle** Tangent to a circle at any point on it is motivated by chords drawn from points coming closer and closer to the point. **3. Constructions** Division of a line segment in a given ratio (internally). Tangent to a circle from a point outside it. Construction of a triangle similar to a given triangle.
Chapter 6	Mensuration	**1. Areas Related to Circles** Motivate the area of a circle; area of sectors and segments of a circle. Problems based on areas and perimeter/circumference of the above said plane figures. **2. Surface Areas and Volumes** Problems on finding surface areas and volumes of combinations of any two of the following: cubes, cuboids, spheres, hemispheres and right circular cylinders/cones. Frustum of a cone. Problems involving converting one type of metalic solid into another and other mixed problems.
Chapter 7	Statistics and Probability	**1. Statistics** Mean, median and mode of grouped data. Cumulative frequency graph. **2. Probability** Classical definition of probability. Simple problems on single events, not using set notation.

Part – III

General Science

A: CHEMISTRY

Chapter	Content	Key Concepts
Chapter 1	Chemical Reactions and Equations	Types of chemical reactions: combination, decomposition, displacement, double displacement, precipitation, neutralisation, oxidation and reduction in terms of gain and loss of oxygen and hydrogen.
Chapter 2	Acids, Bases and Salts	Acids, bases and salts: General Properties, examples and uses
Chapter 3	Metals and Non-metals	Brief discussion of basic metallurgial processes. Properties of common metals. Elementary idea about bonding
Chapter 4	Carbon and its Compounds	Carbon compounds, elementray idea about bonding. Saturted hydrocarbons, alcohols, carboxylic acids: (no preparation only properties), Soap-cleansing action of soap
Chapter 5	Periodic Classification of Elements	Gradation in properties: Mendeleev periodic table.

B: PHYSICS

Chapter	Content	Key Concepts
Chapter 1	Light-Reflection and Refraction	Convergence and divergence of light. Images formed by a concave mirror, related concepts centre of curvature, principal axis. Optical centre, focus, focal length. Refraction; laws of refraction. Images formed by a convex lens; functioning of lens in human eye; problems of vision and remedies. Application of spherical mirrors and lenses Appreciation of concept of refraction; velocity of light; refractive index; twinkling of stars; dispersion of light. Dispersion of light. Scattering of light.
Chapter 2	Electricity	Electric current and circuit, electric potential and potential difference, circuit diagram, Ohm's law, factors on which the resistance of a conductor depends, resistance of a system of resistors, Series combination of resistances. Parallel combination of resistances. Power dissipated due to current. Inter relation between P, V, I and R.
Chapter 3	Magnetic Effects of Electric Current	Magnetic field, Field lines, Field due to a current carrying conductor, Field due to current carrying coil or solenoid; Force on current carrying conductor, Fleming's left-hand rule. Electromagnetic induction. Induced potential difference, Induced current, Fleming's Right Hand Rule, Direct current. Alternating current; frequency of AC. Advantage of AC over DC. Domestic electric circuits.