Class 9-Mathematics-syllabus

There will be one paper of two and a half hours duration carrying 80 marks and Internal Assessment of 20 marks.

The paper will be divided into two sections, Section I (40 marks) and Section II (40 marks).

Section I: will consist of compulsory short answer questions.

Section II: Candidates will be required to answer four out of seven questions.

The solution of a question may require the knowledge of more than one branch of the syllabus.

Chapter-1 Pure Arithmetic:

• Rational and Irrational Numbers

• Rational, • irrational numbers as real numbers, • their place in the number system. • Surds and rationalization of surds. • Simplifying an expression by rationalizing the denominator.

Chapter-2 Commercial Mathematics:

• Compound Interest

Chapter-3 Algebra:

•Expansions •Factorisation •Simultaneous Linear Equations in two variables. (With numerical coefficients only) •Indices/ Exponents

•Logarithms

Chapter-4 Geometry:

•Triangles •Rectilinear Figures • Circle

Chapter-5 Statistics:

•Introduction • collection of data • presentation of data • Graphical representation of data • Mean • Median of ungrouped data.

Chapter-6 Mensuration:

• Area and perimeter of a triangle • quadrilateral • Area and circumference of circle. • Surface area and volume of Cube and Cuboids.

Chapter-7 Trigonometry:

• Trigonometric Ratios: sine, cosine, tangent of an angle and their reciprocals. • Trigonometric ratios of standard angles- 0, 30, 45, 60, 90 degrees. • Evaluation of an expression involving these ratios.

• Simple 2-D problems involving one right-angled triangle.

• Concept of trigonometric ratios of complementary angles and their direct application

Chapter-8 Co-ordinate Geometry:

•Cartesian System • plotting of points in the plane for given coordinates • solving simultaneous linear equations in 2 variables graphically and finding the distance between two points using distance formula.

INTERNAL ASSESSMENT

A minimum of two assignments are to be done during

the year as prescribed by the teacher.

Suggested Assignments

• Conduct a survey of a group of students and represent it graphically - height, weight, number of family members, pocket money, etc.

• Planning delivery routes for a postman/milkman.

• Running a tuck shop/canteen.

• Study ways of raising a loan to buy a car or house, e.g. bank loan or purchase a refrigerator or a television set through hire purchase.

• Cutting a circle into equal sections of a small central angle to find the area of a circle by using the formula $A = \pi r^2$

• To use flat cutouts to form cube, cuboids and pyramids to obtain formulae for volume and total surface area.

• Draw a circle of radius r on a ½ cm graph paper, and then on a 2mm graph paper. Estimate the area enclosed in each case by actually counting the squares. Now try out with circles of different radii. Establish the pattern, if any, between the two observed values and the theoretical value (area = πr^2 Any modifications?