

TERMWISE SYLLABUS

SESSION-2018-19

CLASS-X

SUBJECT : MATHEMATICS

Course Structure

Units	Unit Name	Marks
I	NUMBER SYSTEMS	06
II	ALGEBRA	20
III	COORDINATE GEOMETRY	06
IV	GEOMETRY	15
V	TRIGONOMETRY	12
VI	MENSURATION	10
VII	STATISTICS & PROBABILITY	11
Total		80
Internal assessment		20
Grand Total		100

Schedule for Periodic Assessments and CASExam. of Session 2018-19

Schedule	Months for PA's	Syllabus covered
Mid Term Examination - 2018(Periodic Assessment-I)	September 2018	Ch-1,Ch-2,Ch-3,,Ch-4,Ch-5,Ch-6,Ch-7, Ch-14, Ch-15
Periodic Assessment-II	December 2018	Ch-1,Ch-2,Ch-3,,Ch-4,Ch-5,Ch-6, Ch-7,Ch-8, Ch-9, Ch-10,Ch-11,Ch-12, Ch-14 ,Ch-15
Periodic Assessment-III	January 2019	Ch-1 to Ch-15
Common Annual School Examination 2018-19	March 2019	Ch-1 to Ch-15

The assessment format and weightage of marks for class X will be as under:

Class	PA-I	PA-II	Assessment Of Note book	Subject Enrichment Activity	CASE	Total
X	5	5	5	5	80	100

Note: Consider the marks of two best Periodic Assessments out of three Periodic

Assessments for INTERNAL ASSESSMENT

Note book submission (05Marks):

Notebook submission as a part of Internal Assessment is aimed at enhancing seriousness of students towards preparing notes on the topics being taught in the classroom as well as the assignments. This also addresses the critical aspect of regularity, punctuality neatness and notebook upkeep.

Subject Enrichment Activities (05 Marks):

Here are subject specific application activities imbed at enrichment of the understanding and skill development. These activities are to be recorded internally by the concerned subject teacher.

Guidelines issued by CBSE for classes IX & X to be followed by all the Govt & Govt Aided Schools.

TERM WISE SYLLABUS (Session2018-19)

MONTH	CONTENT
	TERM-I
April 2018 To September 2018	<p><u>CHAPTER 1 : REAL NUMBERS</u></p> <p>Euclid's division lemma, Fundamental Theorem of Arithmetic – statements after reviewing work done earlier and after illustrating and motivating through examples Proofs of irrationality of $\sqrt{2}$, $\sqrt{3}$, $\sqrt{5}$. Decimal representation of rational numbers in terms of terminating / non-terminating recurring decimals.</p> <p><u>CHAPTER 2 : POLYNOMIALS</u></p> <p>Zeros of a polynomial. Relationship between zeros and coefficients of quadratic polynomials. Statement and simple problems on division algorithm for polynomials with real coefficients.</p> <p><u>CHAPTER 3: PAIR OF LINEAR EQUATIONS IN TWO VARIABLES</u></p> <p>Pair of linear equations in two variables and graphical method of their solution, consistency/inconsistency.</p> <p>Algebraic conditions for number of solutions. Solutions of a pair of linear equations in two variables algebraically – by substitution, by elimination and by cross multiplication method. Simple situational problems. Simple problems on equations reducible to linear equations.</p>

CHAPTER 4: QUADRATIC EQUATIONS

Standard form of a quadratic equation $ax^2 + bx + c = 0$, ($a \neq 0$). Solutions of quadratic equations (only real roots) by factorization, by completing the square and by using quadratic formula. Relationship between discriminant and nature of roots. Situational problems based on quadratic equations related to day to day activities to be incorporated.

CHAPTER 5: ARITHMETIC PROGRESSIONS

Motivation for studying Arithmetic Progression, Derivation of the n^{th} term and sum of the first n terms of A.P. and their application in solving daily life problems.

CHAPTER 6: TRIANGLES

Definitions, examples, counter examples of similar triangles.

(Prove) If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, the other two sides are divided in the same ratio.

(Motivate) If a line divides two sides of a triangle in the same ratio, the line is parallel to the third side.

(Motivate) If in two triangles, the corresponding angles are equal, their corresponding sides are proportional and the triangles are similar.

(Motivate) If the corresponding sides of two triangles are proportional, their corresponding angles are equal and the two triangles are similar.

(Motivate) If one angle of a triangle is equal to one angle of another triangle and the sides including these angles are proportional, the two triangles are similar.

(Motivate) If a perpendicular is drawn from the vertex of the right angle of a right triangle to the hypotenuse, the triangles on each side of the perpendicular are similar to the whole triangle and to each other.

(Prove) The ratio of the areas of two similar triangles is equal to the ratio of the squares of their corresponding sides.

(Prove) In a right triangle, the square on the hypotenuse is equal to the sum of the squares on the other two sides.

(Prove) In a triangle, if the square on one side is equal to the sum of the squares on the other two sides, the angle opposite to the first side is a right angle. 3

	<p><u>CHAPTER 7: COORDINATE GEOMETRY</u> LINES (In two-dimensions) Review: Concepts of co-ordinate geometry, graphs of linear equations. Distance formula. Section formula (internal division). Area of a triangle.</p> <p><u>CHAPTER 14: STATISTICS</u> Mean, median and mode of grouped data (bimodal situation to be avoided). Cumulative frequency graph.</p> <p><u>CHAPTER 15: PROBABILITY</u> Classical definition of probability. Simple problems on single events (not using set notation)</p> <ul style="list-style-type: none"> ➤ Mental Maths, Maths Lab Activities & YUVA sessions ➤ Revision of syllabus for Periodic Test-I
	TERM II
<p>October 2018 To November 2018</p>	<p><u>CHAPTER 8: INTRODUCTION TO TRIGONOMETRY</u> Trigonometric ratios of an acute angle of a right-angled triangle. Proof of their existence (well defined); motivate the ratios whichever are defined at 0^0 and 90^0 Values (with proofs) of the trigonometric ratios of 30^0, 45^0 and 60^0. Relationships between the ratios. Proof and applications of the identity $\sin^2 A + \cos^2 A = 1$. Only simple identities to be given. Trigonometric ratios of complementary angles.</p> <p><u>CHAPTER 9: SOME APPLICATIONS OF TRIGONOMETRY</u> Heights and distances: Angle of elevation, Angle of Depression. Simple problems on heights and distances. Problems should not involve more than two right triangles. Angles of elevation / depression should be only 30^0, 45^0, 60^0</p> <p><u>CHAPTER 10: CIRCLES</u> Tangent to a circle at point of contact (Prove) The tangent at any point of a circle is perpendicular to the radius through the point of contact. (Prove) The lengths of tangents drawn from an external point to a circle are equal.</p> <p><u>CHAPTER 11: CONSTRUCTIONS</u></p>

	<p>Division of a line segment in a given ratio (internally).</p> <p>Tangents to a circle from a point outside it.</p> <p>Construction of a triangle similar to a given triangle.</p> <p><u>CHAPTER 12: AREA RELATED TO CIRCLES</u></p> <p>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. (In calculating area of segment of a circle, problems should be restricted to central angle of 60°, 90° and 120° only. Plane figures involving triangles, simple quadrilaterals and circle should be taken.)</p> <p><u>CHAPTER 13: SURFACE AREAS AND VOLUMES</u></p> <p>Surfaces areas and volumes of combinations of any two of the following: cubes, cuboids, spheres, hemispheres and right circular cylinders / cones. Frustum of a cone.</p> <p>Problems involving converting one type of metallic solid into another and other mixed problems. (Problems with combination of not more than two different solids be taken.)</p> <ul style="list-style-type: none"> ➤ Revision of syllabus for Periodic Test-II ➤ Mental Maths, Maths Lab Activities & YUVA sessions
<p>December 2018 To February 2019</p>	<ul style="list-style-type: none"> ❖ Revision of whole syllabus for Periodic Test-III ❖ Revision of Support Material ❖ Revision of sample question papers provided by CBSE as well as D.O.E.