

ACADEMIC PLAN 2016-2017
CLASS - IX
SUBJECT - MATHEMATICS

SYLLABUS FOR SUMMATIVE ASSESSMENT I (September)

S.No.	Chapter Name	Marks
1	Number System Real Numbers	17
2	Algebra Polynomials Algebraic Identities	25
3	Co-ordinate geometry	06
4	Mensuration Heron's Formula	05
5	Geometry 1. Introduction to Euclid's Geometry 2. Lines and Angles 3. Triangles	37
		<u>90</u>

SYLLABUS FOR SUMMATIVE ASSESSMENT II (Feb.- March)

S.No.	Chapter Name	Marks
1	Algebra (contd.) Linear equations in two variables	16
2	Statistics and Probability Statistics Probability	10 8
3	Mensuration Surface Areas and Volumes	18
4	Geometry (contd.) Areas of Parallelogram and Triangles Circles Constructions	28
5	Open Text Based Assessment (Based on Quadrilaterals)	10
		<u>90</u>

SCHEDULE OF FORMATIVE ASSESSMENT & UNIT TEST

FORMATIVE ASSESSMENT-I	FORMATIVE ASSESSMENT-II	FORMATIVE ASSESSMENT-III	FORMATIVE ASSESSMENT-IV
UNIT TEST (20)	UNIT TEST (20)	UNIT TEST (20)	SPECIAL TEST (40)
GROUP ACTIVITY(10)	GROUP ACTIVITY(10)	GROUP ACTIVITY(10)	GROUP ACTIVITY(10)
ACTIVITY (10)	ACTIVITY (10)	ACTIVITY (10)	ACTIVITY (10)

SYLLABUS FOR UNIT TEST –I

1. Numbers System
2. Heron’s Formula

SYLLABUS FOR UNIT TEST -II

- 1.Co-ordinate Geometry
2. Lines and Angles

SYLLABUS FOR UNIT TEST -III

- 1.Linear equations in two variables
2. Statistics and probability

SPECIAL TEST

4 – 5 CHAPTERS of S.A-II
(To be decided later)

ACTIVITY FOR FORMATIVE ASSESSMENT -I

1. Square root spiral representing real numbers.
(Eg. $\sqrt{2}$, $\sqrt{3}$, ..., $\sqrt{10}$.
Worksheet related to representation of real numbers on number line.
2. To find area of plane figure made by combination of two or more plane figures.
Group Activity related to areas of Plane figures. (2 students)

ACTIVITY FOR FORMATIVE ASSESSMENT -II

1. To obtain mirror image of a geometrical figure w.r.t. both the axes.
MCQ (Topics of SA-1)
2. Power Point Presentation on “EUCLID’S GEOMETRY” to be made by a group of 5 students.
3. Holiday Homework (Interdisciplinary Project)

ACTIVITY FOR FORMATIVE ASSESSMENT -III

1. Representing and interpreting some standard lines graphically and generalizing the result for standard form of linear equation in two variables
Worksheet related to the above activity.
2. Group Activity on Probability. (2 students)

ACTIVITY FOR FORMATIVE ASSESSMENT -IV

1. Group Project on statistics: Collecting and analyzing the data (Blood group, Birth month, height, weight, Marks) statistically.
Project will involve a group of 5 students.
2. Mathematics Activity File will be assessed.

SUMMATIVE ASSESSMENT I (APRIL – SEPTEMBER)

Formative Assessment 1	Topics	Learning Objectives	H.W.	Recapitulation, Assignment, Class Test	Activity to be taken/assessed*
(April) 20 days	Real numbers	To gain knowledge of various types of numbers and appreciate the need to extend number system till real numbers. To represent real numbers on a number line.	3	1(warm-up activity in the form of frayer's model, 1(Assignment) 2(Class tests)	*1.Square root spiral representing real numbers. (Eg. $\sqrt{2}$, $\sqrt{3}$, ..., $\sqrt{10}$).
	Heron's formula	To find the area of triangle when its sides are known. To find area of different 2-D figures made up with combination of two or more types of plane figures.	2	1(recapitulation test), 1(Assignment) 1(Class tests)	*2. To find area of plane figure made by combination of two or more plane figures.
(May) 16 days	Polynomials (without algebraic identities)	To define a polynomial and identify its different types. To be able to find the remainder when a given polynomial is divided by a linear polynomial using remainder theorem and factorizes a polynomial using factor theorem.	3	2(recapitulation tests), 1(Assignment) 2(Class tests)	Note: Above activities will be assessed separately involving their application.
	Polynomials (algebraic identities)	To be able to factorize polynomials using different algebraic identities. To verify algebraic identities algebraically.			

Formative Assessment 2	Topic	Learning Objectives	H.W.	Recapitulation, Assignment, Class Test	Activity to be taken/ assessed*
(July) 21 days	Coordinate geometry	To explore the idea of placement/location of an object with frame of reference. To get the idea of a Cartesian plane and locating a point on it if its co-ordinates are given.	1	1(recapitulation through oral work), 1(Assignment) 1(test in the form of Worksheet on Co-ordinate Geometry)	1. To obtain mirror image of a geometrical figure w.r.t. both the axes.
(Aug.) 22 days	Introduction to Euclid's geometry	To know about basic definitions of terms like axioms, postulates, theorems etc. To gain knowledge about Euclid's axioms and postulates.	3	1(assessment through crossword puzzle)	*2. Power Point Presentation on "EUCLID'S GEOMETRY" to be made by group of 5 students.
	Lines and angles	To know about basic definitions of terms like lines, angles and their types. To know about relation between different types of angles made by intersecting and parallel lines.		1(recapitulation test), 1(Assignment)* 1(Class test)	
	Triangles	To know about basic concepts related to congruency of triangles, properties of triangles and inequalities in a triangle.	4	1(recapitulation worksheet), 1(combined assignment of geometry)*, 1(Class test)	3. To show that if two sides in a triangle are unequal, then, the greater side has greater angle opposite to it. *4. MCQ
(Sep.) 5 days	REVISION	SUMMATIVE ASSESSMENT-I EXAMINATION			

Note:- (i) Separate assignments for remedial students will be given and HOTS questions (* marked) will be included for enrichment in regular assignments.

(ii) Weekly tests will be planned for each topic/chapter.

SUMMATIVE ASSESSMENT II (OCTOBER – MARCH)

Formative Assessment 3	Topic	Learning Objectives	H.W.	Recapitulation, Assignment, Class Test	Activity to be taken/assessed*
(Oct.) 17 days	Linear equations in two variables	To introduce linear equation in two variables with the help of daily life situations around us. To find solutions of a linear equation in two variables. To interpret a linear equation in two variables graphically as a straight line.	2	1(recapitulation test), 1(Assignment) 2(Class tests)	1. Representing and interpreting some standard lines graphically and generalizing the result for standard form of linear equation in two variables. *Worksheet related to the above activity.
	Statistics	To recall the meaning of the term statistics and its need in day-to-day life. To develop the skill of representing the data graphically. To learn about various measures of central tendency and applying them in solving problems.	3	1(recapitulation activity), 1(Assignment)* 1(test in the form of Worksheet on Statistics and probability)	
	Probability	To be able to explain different terms related to probability. To calculate probability of an event and know about limits of probability.	1	1(recapitulation through oral work), 1(Combined Assignment of Statistics and Probability)* 1(Class test)	*2. Group Activity on Probability. (2 students)
	Surface areas and volumes	To be able to identify and differentiate between the situations where surface area or volume is required. To apply knowledge of ‘surface area and volumes’ in solving daily life problems.	4	1(recapitulation test), 1(Assignment) 2(Class tests)	3. To make an open right circular cylinder of given base circumference and height with the help of a rectangular sheet.
(Nov.) 21 days					

Formative Assessment 4	Topics	Learning Objectives	H.W.	Recapitulation, Assignment, Class Test	Activity to be taken/assessed*
(Dec.) 22 days	Quadrilaterals	To recall and review the knowledge of various types of quadrilaterals. To understand the properties of all types of quadrilaterals with reference to its sides and angles.	2	1(recapitulation activity using frayer's model), 1(Assignment)* 1(Class test)	*Group Project on statistics: Collecting and analyzing the data. (Blood group, Birth month, height, weight, Marks) statistically. Project will involve a group of 5 students. To verify the following by paper cutting and pasting: 1.Mid-point property of triangle. 2. Parallelograms on the same base and between the same parallels have the same area. 3. Twice angle theorem of a circle. 4.Exterior angle property of Cyclic quadrilateral property. *Lab Manual will be assessed.
	Area of parallelograms and triangles	To identify the figures on the same base and between same parallels. To derive and verify the fact that parallelograms and triangles on the same or equal base(s) and between the same parallels have the same area.	2	1(Assignment)* 1(Class test)	
	Circles	To recall and review definition and basic terms related to circles. To prove various theorems related to chords and arcs of the circle. To apply theorems learned to solve various problems.	2	1(recapitulation through discussion) 1(combined assignment of geometry)* 1(Class test)	
	Constructions	To acquire the knowledge of basic requisites to construct a triangle. To develop the skill of constructing a triangle with given conditions.	1	1(recapitulation test), 1(Class test) 1 MCQ/objective test (combined for geometry)	
(Jan.) 7 days	Open Text Based Assessment	Quadrilaterals		1(Assignment) 1(Class test as worksheet)	

Feb **REVISION** **SUMMATIVE ASSESSMENT-II EXAMINATION**

Note: (i) Students will maintain three registers: (i) C.W. (ii) H.W. (iii) Assignment and (iv) one Activity File.
(ii) Separate assignments for remedial students will be given and HOTS questions (*marked) will be included for enrichment in regular assignments.
(iii) Weekly tests will be planned for each topic/chapter.