

**Date : 07-07-2020**

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

**Subject – Mathematics (CODE NO. 041)**

**CLASS X {Session – 2020}- 21**

**UNIT – NUMBER SYSTEM**

**[Chapter – REAL NUMBERS]**

Topics exist in the present session	Topics removed or doesn't exist
Fundamental Theorem of Arithmetic statement 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 <u>in terms</u> of terminating/ Non- terminating recurring decimals.	<u>Euclid's division lemma.</u>

---

**UNIT II – ALGEBRA**  
**[Chapter – POLYNOMIALS]**

Topics exist in the present session	Topics removed or doesn't exist
<u>Zeros of a polynomial.</u> Relationship Between <u>zeroes and coefficients</u> of <u>Quadratic polynomials.</u>	Statement and simple problems on division algorithm for polynomial with real coefficients.
<b>[Chapter – PAIR OF LINEAR EQUATIONS IN TWO VARIABLES.]</b>	
Pair of linear equations in two variables and <u>graphical</u> method of their solution, consistency / <u>inconsistency.</u> Algebraic conditions for number of solutions. Solution of a pair of linear equations in two <u>variables</u> algebraically by substitution, by <u>elimination.</u> <u>Simple situational problems.</u> Simple problems on equations reducible to <u>Linear equations.</u>	Cross- multiplication method.

### [Chapter – QUADRATIC EQUATIONS]

Topics exist in the present session	Topics removed or doesn't exist
Standard form of a quadratic equation $ax^2+bx+c=0$ , ( $a \neq 0$ ). Solution of quadratic equations (only real roots) by factorization, and by using quadratic formula. Relationship between discriminant and nature of roots.	situational problems based on equations reducible to quadratic equation.
<b>[Chapter – ARITHMETIC PROGRESSIONS]</b>	
Motivation for studying Arithmetic Progression Derivation of the $n^{\text{th}}$ term and Sum of the first $n$ terms of A.P.	Application in solving daily life problems based on sum to $n$ terms.
<b>UNIT III – COORDINATE GEOMETRY</b>	
<b>[Chapter – COORDINATE GEOMETRY]</b>	
1. Lines ( In two-dimensions) Review: Concepts of coordinate geometry, graphs of linear equations. Distance formula. Section formula ( internal division).	Area of a triangle.

## UNIT IV- GEOMETRY

### [Chapter - TRIANGLES]

Topics exist in the present session	Topics removed or doesn't exist
<p>Definitions, examples, counter examples of <u>similar triangles</u>.</p> <p>1. (<u>prove</u>) 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.</p> <p>2. (<u>motivate</u>) If a line divides two sides of a triangle in the same ratio, the line is parallel to the third side.</p> <p>3. (<u>motivate</u>) If in two triangles, the <u>corresponding angles</u> are equal, their <u>corresponding sides</u> are proportional and the <u>triangles</u> are similar.</p>	<p>Proof of the following theorems are deleted.</p> <p>a) The ratios of the areas of two similar triangles is equal to the ratio of the squares of their <u>corresponding sides</u>.</p> <p>b) In a triangle, if the square on <u>one side</u> is equal to sum of the squares on the other two sides, the angle opposite to the first side is a right angle.</p>



Topics exist in the present session	Topics removed or doesn't exist
<p>4. (motivate) If the corresponding sides of two triangles are proportional, their corresponding angles are equal and the two triangles are similar.</p> <p>5. (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.</p> <p>6. (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.</p> <p>7. (prove) In a right triangle, the square on The hypotenuse is equal to the sum of the squares on the other two sides.</p>	

**[Chapter – CIRCLES]**

Topics exist in the present session	Topics removed or doesn't exist
<p>Tangent to a circle at, point of contact</p> <p>1. (prove) The tangent at any point of a circle is perpendicular to the radius through the point of contact.</p> <p>2. (prove) The lengths of tangents drawn from an external point to a circle are equal.</p> <p style="text-align: center;"><b>[Chapter – CONSTRUCTIONS]</b></p>	<p>No deletion.</p>
<p>1. Division of a line segment in a given ratio (internally).</p> <p>2. Tangents to a circle from a point outside it.</p> <p style="text-align: center;"><b>UNIT V – TRIGONOMETRY</b> <b>[Chapter – INTRODUCTION TO TRIGONOMETRY]</b></p>	<p>Construction of a triangle similar to a given triangle.</p>
<p>Trigonometric ratios of an acute angle of a right-angled triangle. Proof of their existence (well defined). Values of the trigonometric ratios of <math>30^\circ</math>, <math>45^\circ</math> &amp; <math>60^\circ</math>. Relationships between the ratios.</p>	<p>motivate the ratios which ever are defined at <math>0^\circ</math> &amp; <math>90^\circ</math></p>

### [Chapter – TRIGONOMETRIC IDENTITIES]

Topics exist in the present session	Topics removed or doesn't exist
Proof and applications of the identity $\sin^2 A + \cos^2 B = 1$ . Only simple identities to be given.	Trigonometric ratios of <u>complementary</u> angles.

### [Chapter – HEIGHTS AND DISTANCES]

Simple problems on heights and <u>distances</u> . Problems should not involve more than two <u>right triangles</u> . Angles of elevation/ <u>depression</u> should be only $30^\circ, 45^\circ, 60^\circ$ .	No deletion
--	-------------

### UNIT VI – MENSURATION

#### [Chapter – AREAS RELATED TO CIRCLE]

Motivate the area of a circle; area of sectors and segment of a circle. Problems based on <u>areas &amp; perimeters</u> / <u>circumference</u> of the <u>above said plane figures</u> . (In calculating area of segment of a circle, problems should be <u>restricted to central angle of <math>60^\circ</math> and <math>90^\circ</math> only</u> . Plane figures involving triangles, simple <u>quadrilaterals</u> and circle should be taken.)	Problems based on central angle $120^\circ$ .
---	---



## [Chapter – SURFACE AREAS AND VOLUMES]

Topics exist in the present session	Topics removed or doesn't exist
1. Surface areas and volumes of combination of any two of the following; cubes, cuboid, spheres, hemispheres and right circular cylinders/ cones. 2. 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)	Frustum of a cone.

## UNIT VII – STATISTICS AND PROBABILITY

### [Chapter- STATISTICS]

Mean, median and mode of grouped data (bimodal situation and step deviation Method for finding then mean to be avoided)	Step deviation method for finding the mean. Cumulative frequency graph.
---	--

### [Chapter – PROBABILITY]

Classical definition of probability. Simple Problems on finding the probability of an Event.	No deletion
--	-------------

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★  
★ **Analyzed & Compiled by**

★ **# Deepak Kumar Choudhary**

★ **TGT (Science)**

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★  
★ **R. S. M. Public School, Supaul**

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★