केन्द्रीय माध्यमिक शिक्षा बोर्ड
(शिक्षा मंत्रालय भारत सरकार के अधीन एक स्वायत्त संगठन)
CENTRAL BOARD OF SECONDARY EDUCATION
(An Autonomous Organisation Under the Ministry of Education, Govt. of India)

F.1001/CBSE-Acad/Curriculum/2023

March 31, 2023

Cir No: Acad-39/2023

All Heads of Institutions affiliated to CBSE

Subject : Secondary and Senior School Curriculum and Sample Question Papers for the session 2023-24

1. CBSE annually provides the curriculum for classes IX to XII containing academic content, syllabus for examinations with learning outcomes, pedagogical practices, and assessment guidelines.

2. It is important that schools ensure curriculum transactions as per the directions given in the initial pages of the Curriculum document. The subjects should be taught as per the curriculum given by suitably incorporating strategies such as Art-Integrated Education, Experiential Learning, Pedagogical Plans, etc. wherever possible.

3. As CBSE has adopted National Curriculum Framework for Foundational Stage – 2022, schools offering foundational or preparatory education are advised to adhere to the recommendations regarding curriculum, pedagogy, assessment, and other areas described in detail in the NCFFS-2022 and guidelines of the Board issued from time to time.

4. Sample Question Papers with detailed designs of the Question Paper are also available on CBSE's website to reflect the impact of changes made in the curriculum. SQPs also provide students with an idea of the exam pattern and the type of questions that may be asked in the actual examination in order to ensure transparency and reduce stress. Students will also get a clear understanding of the weightage of different topics and the marking scheme to be followed by going through these Sample Question Papers.

    Schools are requested to share the Curriculum and Sample Question Papers available on **www.cbseacademic.nic.in** at the given links, with all students and teachers –

    • Secondary & Senior Secondary School Curriculum –
      https://cbseacademic.nic.in/curriculum_2024.html

    • Sample Question Papers – Secondary –
      https://cbseacademic.nic.in/SQP_CLASSX_2023-24.html

    • Sample Question Papers – Senior Secondary –
      https://cbseacademic.nic.in/SQP_CLASSXII_2023-24.html

(Dr. Joseph Emmanuel)
Director (Academics)

'शिक्षा सदन', 17 राऊज़ एवेन्यू इंस्टीटूशनल एरिया, नई दिल्ली–110002
'Shiksha Sadan', 17, Rouse Avenue, Institutional Area, New Delhi – 110002

Syllabus

Latest Syllabus 2023-24
(Issued by CBSE on 31st March 2023)
MATHEMATICS (BASIC)-(Code No. 041)
Class-X-(Theory)

Unit No.	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**

UNIT I: NUMBER SYSTEMS

1. REAL NUMBERS   (15) Periods

Fundamental Theorem of Arithmetic - statements after reviewing work done earlier and after illustrating and motivating through examples, Proofs of irrationality of $\sqrt{2}$, $\sqrt{3}$, $\sqrt{5}$.

UNIT II: ALGEBRA

1. POLYNOMIALS   (8) Periods
Zeros of a polynomial. Relationship between zeros and coefficients of quadratic polynomials.

2. PAIR OF LINEAR EQUATIONS IN TWO VARIABLES   (15) Periods
Pair of linear equations in two variables and graphical method of their solution, consistency/inconsistency.
Algebraic conditions for number of solutions. Solution of a pair of linear equations in two variables algebraically - by substitution, by elimination. Simple situational problems.

3. QUADRATIC EQUATIONS   (15) Periods
Standard form of a quadratic equation $ax^2 + bx + c = 0$, $(a \neq 0)$. Solutions of quadratic equations (only real roots) by factorization, 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.

4. ARITHMETIC PROGRESSIONS   (10) Periods
Motivation for studying Arithmetic Progression. Derivation of the nth term and sum of the first n terms of A.P. and their application in solving daily life problems.

UNIT III: COORDINATE GEOMETRY

1. COORDINATE GEOMETRY   (15) Periods
Review : Concepts of coordinate geometry, graphs of linear equations. Distance formula. Section formula (internal division).

Syllabus

UNIT IV: GEOMETRY

1. TRIANGLES   (15) Periods

Definitions, examples, counter examples of similar triangles.

1. **(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.
2. **(Motivate)** If a line divides two sides of a triangle in the same ratio, the line is parallel to the third side.
3. **(Motivate)** If in two triangles, the corresponding angles are equal, their corresponding sides are proportional and the triangles are similar.
4. **(Motivate)** If the corresponding sides of two triangles are proportional, their corresponding angles are equal and the two triangles are similar.
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.

2. CIRCLES   (10) Periods

Tangent to a circle at, point of contact

1. **(Prove)** The tangent at any point of a circle is perpendicular to the radius through the point of contact.
2. **(Prove)** The lengths of tangents drawn from an external point to a circle are equal.

UNIT V: TRIGONOMETRY

1. INTRODUCTION TO TRIGONOMETRY   (10) Periods

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° and 90°. Values of the trigonometric ratios of 30°, 45° and 60°. Relationships between the ratios.

2. TRIGONOMETRIC IDENTITIES   (15) Periods

Proof and applications of the identity $\sin^2 A + \cos^2 A = 1$. Only simple identities to be given.

3. HEIGHTS AND DISTANCES: (10) Periods

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°, 45°, and 60°.

UNIT VI : MENSURATION

1. AREAS RELATED TO CIRCLES   (12) Periods

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.

2. SURFACE AREAS AND VOLUMES   (12) Periods

Surface areas and volumes of combinations of any two of the following: cubes, cuboids, spheres, hemispheres and right circular cylinders/cones.

UNIT VII : STATISTICS AND PROBABILITY

1. STATISTICS   (18) Periods

Mean, median and mode of grouped data (bimodal situation to be avoided).

2. PROBABILITY   (10) Periods

Classical definition of probability. Simple problems on finding the probability of an event.

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Syllabus

MATHEMATICS-Basic
QUESTION PAPER DESIGN
CLASS – X (2023-24)

Time : 3 Hours   **Max. Marks : 80**

S. No.	Typology of Questions	Total Marks	% Weightage (approx.)
1.	**Remembering :** Remembering: Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers. Understanding: Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas	60	75
2.	**Applying:** Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	12	15
3.	**Analysing :** Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations **Evaluating :** Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria. **Creating :** Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions	8	10
	Total	**80**	**100**

INTERNAL ASSESSMENT	20 Marks
● Pen Paper Test and Multiple Assessment (5+5)	10 Marks
● Portfolio	05 Marks
● Lab Practical (Lab activities to be done from the prescribed books)	05 Marks

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