

First Terminal Examination 2083

Unit	Topics	E TP	Teaching Methods	Teaching Materials	Evaluation techniques & tools	Rem
1	Set ➤ Operations on set (Union, Intersection, Difference, complement)	8	➤ question/ answer ➤ Demonstration ➤ Analysis/ synthesis	Two or three ring and wooden block numbers.	* oral test * Written Exam * practical * project work /field work	
2	Arithmetic ➤ Commission, ➤ bonus and Dividend ➤ Taxation	9	* Q\A discussion visit shop\ market/Tax office and related field if possible	<u>Tax related bills</u>	* oral test * Written Exam * practical * project work/field work	
3	Mensuration ➤ Area of scalene triangle ➤ Application of area in terms of Measurement scale in local contest(Bigha, Kattha, Dhur,Ropani, Aana, paisa and Daam) ➤ Problems Related to find area and perimeter of triangular and quadrilateral shape of field.	10	*Develop formula for the area of scalene triangle * Use the relation of meter, square meter and local measurement like Bigha, Kattha, Dhur,Ropani, Aana, paisa and Daametc to find area of triangular and quadrilateral field * Use measuring tape and find the area of square shape and rectangular shape, quadrilateral shape, triangular shape field and find their area. *Practical *Q\A discussion	Measurement tape, Scale etc.	* oral test * Written Exam * practical * project work/field work	
4.	Algebra ➤ Sequence and series • Introduction of sequence and general term • Sigma /Summation and use of symbols ➤ Factorization (Review of the form a^2-b^2 , a^3+b^3 , a^3-b^3 , ax^2+bx+c), $a^4+a^2b^2+b^4$	10	*Q\A discussion *Demonstration like $x^2+3x+2 = (x+2)(x+1)$ etc.	Sheet of hard paper and scissors	* oral test * Written Exam * practical * project work/field work	
5.	Geometry: Triangles ➤ Relation of external angle and the interior angle which are non- adjacent angles. (Experimental verification only) ➤ Sum of two sides of a triangle is always greater than third side (Experimental verification only) ➤ Relation of angle opposite to greatest and smallest side. (Experimental verification	10	* practical * question/Answer * Research * Demonstration * paper folding *showing triangular shape in house temple playground etc * problem solving	Wooden or paper triangle or quadrilaterals etc are required.	* oral test * Written Exam * practical * project work/field work	

SYLLABUS 2083**C. Mathematics****Class: 9**

	only) ➤ Geometrical problems related to above facts.					
6	Trigonometry: ➤ Concept of trigonometry ratios	2				
7	Statistics ➤ Collection of data, frequency table, histogram, ogives ➤ Arithmetic mean (individual and discrete data),	8				
	Total					

Full Marks: 75**Time: 3:00 hrs.****Specification Grid First term 2083**

S.N.	Content	No of items				T.N Items	Total Questions	Total Marks
		K	U	A	HA			
1.	Sets	1	1	1	1	4	1	6
2.	Arithmetic	2	2	3	2	9	3	14
3.	Menstruation	2	2	3	2	8	3	14
4.	Algebra	2	2	3	2	9	3	15
5.	Geometry	2	3	2	2	9	3	14
6.	Statistics	1	2	2	1	6	2	8
7.	Trigonometry	1	1	1	1	4	1	4
Total		11	13	14	11	49	16	75

Mid-Terminal Examination 2083

Unit	Topics	Per Iods	Teaching Methods	Teaching Materials	Evaluation techniques & tools	Rem.
1	Set ➤ Cardinality of sets (solution of word problems related to two sets and their Venn-diagram)	5				
2	Arithmetic ➤ Home arithmetic (bill of electricity, water, telephone, mobile, taxi fare etc)	8	* Q/A discussion * Research * Demonstration * visit related field if possible.	<u>Bill of related field</u>	* oral test * Written Exam * practical * project work /field work	
3	Mensuration ➤ Area of four walls, ceiling, floor of room. ➤ Cost estimation. ➤ Total cost	10	* Analysis and synthesis * Research * Q/A discussion * Demonstration * Problem solving * paper folding	Measurement tape, scale etc	* oral test * Written Exam * practical * project work /field work	
4.	Algebra ➤ Sequence and Series (geometric) ➤ H.C.F. and L.C.M. of algebraic expression like up to three algebraic expressions.	10	* Q/A discussion * Demonstration		* oral test * Written Exam * practical * project work /field work	
5.	Geometry ➤ Base angles of isosceles triangle and their relations, and its converse. ➤ The bisector of the vertical angle of an isosceles triangle is perpendicular bisector of base and its converse ➤ Similar Triangles (Relations between corresponding sides and angles)	8	* Demonstration * Practical * Analysis and synthesis * Research	Triangular shapes of different size but similar are required	* oral test * Written Exam * practical * project work /field work	
6.	Trigonometry ➤ Table of 0^0 to 90^0 and trigonometric calculations	4				
7.	Statistics * medians Quartiles and mode	6	Use statistical data available in school, class room and field work		* oral test * Written Exam * practical * project work /field work	
8.	Probability * Definition of basic terms, probability scale and use of probability * Theoretical and empirical probability * Probability of an experiment and an event	8				
	Total ETP	60				

Full Marks: 75**Time: 3:00 hrs.****Specification Grid Mid term 2083**

S.N.	Content	No of items				T.N Items	Total Questions	Total Marks
		K	U	A	HA			
1.	Sets	1	1	1	1	4	1	6
2.	Arithmetic	2	2	3	2	9	3	13
3.	Menstruation	2	2	2	2	8	3	13
4.	Algebra	2	2	3	1	8	3	15
5.	Geometry	2	2	2	2	8	3	13
6.	Statistics and Probability	2	2	2	2	8	2	11
7.	Trigonometry	1	1	1	1	4	1	4
Total		11	13	14	11	49	16	75

Unit	Topics	Per Iods	Teaching Methods	Teaching Materials	Evaluation techniques & tools	Remarks
1	Set					
2	Arithmetic					
3	Mensuration ➤ Surface area and volume of Prism ➤ Area and volume of Cylinder and Sphere	8				
4.	Algebra ➤ Laws of indices ➤ Simplification of indices.	8	* Q\A discussion * demonstration * problem solving		* oral test * Written Exam * practical * project work /field work	
5.	Geometry ➤ Quadrilaterals: Properties of parallelogram (theoretically only) ➤ The St. lines joining the end points of same sides of equal and parallel lines are also equal and parallel ➤ Opposite angles and sides of parallelogram are equal ➤ Diagonals of parallelogram bisect each other ➤ Converse of above theorems ➤ Problems related to above theorems. ➤ problem related to quadrilateral	16	* Demonstration * Practical * Analysis and synthesis * Research	Paper or wooden shape of parallelogram etc are required. Geo board Geometry box	* oral test * Written Exam * practical * project work /field work	
6.	Trigonometry					
7	Statistics					
	Revision					

Full Marks: 75

Time: 3:00 hrs.

Specification Grid Second term 2083

S.N.	Content	No of items				T.N Items	Total Questions	Total Marks
		K	U	A	HA			
1.	Sets	1	1	1	1	4	1	6
2.	Arithmetic	2	2	3	2	9	3	13
3.	Menstruation	2	2	2	2	8	3	13
4.	Algebra	2	2	3	1	8	3	15
5.	Geometry	2	2	2	2	8	3	13
6.	Statistics and Probability	2	2	2	2	8	2	11
7.	Trigonometry	1	1	1	1	4	1	4
Total		11	13	14	11	49	16	75

SYLLABUS 2083
Annual Examination 2082

C. Mathematics

Class: 9

Unit	Topics	Periods	Teaching Methods	Teaching Materials	Evaluation techniques & tools	Remarks
1	Set					
2	Arithmetic					
3	Mensuration					
4.	Algebra ➤ Solution of simultaneous equations. (substitution method, elimination method) ➤ verbal problems having two unknowns.	10	* question/answer discussion * Research, * practical * demonstration		* oral test * Written Exam * practical * project work /field work	
5.	Geometry ➤ Construction quadrilateral, trapezium and rhombus ➤ Circle:- Relation of chord and its perpendicular from center. ➤ Relation of line joining the centre and mid point of chord with the chord of a circle ➤ .Relation of centre and the perpendicular bisector of chord of circle. ➤ Relation of equal chords and their distance from the center of circle. ➤ Problem related to centre of circle and a chord.	27	* practical and demonstration * Analysis and synthesis * Research	Geo- board and rubber are required Circular sheet with chords and angle in them	* oral test * Written Exam * practical * project work /field work	
6.	Trigonometry					
7.	Statistics					
8.	Probability					

Full Marks: 75 Time: 3:00 hrs.
Specification Grid Annual exam 2083

SN	Area	Knowledge		Understanding		Application		Higher ability		Total no.of items	Total no.of question	Total marks	Total time (min)
		No.of item	Marks	No.of item	Marks	No.of item	Marks	No.of item	Marks				
1	Set	1	1	1	1	1	3	1	1	4	1	6	14
2	Arithmetic	2	2	2	3	3	5	2	3	9	3	13	31
3	Mensuration	2	2	2	3	2	5	2	3	8	3	13	31
4	Algebra	2	2	2	4	3	7	1	2	8	3	15	36
5	Geometry	2	2	2	3	2	5	2	3	8	3	13	31
6	Statistics and probability	2	2	2	3	2	4	2	2	8	2	11	27
7	Trigonometry	1	1	1	1	1	1	1	1	4	1	4	10
Total		12	12	12	18	14	30	11	15	49	16	75	180