Strategic Course Division -2081

Opt. Maths

Class:- VIII

First Term

S.N.	Contents	K	U	A	HA
1	*Algebra*	1	1		1
2	*Matrix*	1	2	1	
3	*Co-ordinate Geometry*	1	1		1
4	*Trigonoetry*	2	1	2	
5	*Transformation*	1	1	1	
6	*Statistics*		1	1	
	Total Questions	**6**	**7**	**5**	**2**
	Total	**6×1=6**	**7×2=14**	**5×4=20**	**2×5=10**
K= Knowledge, U = Understanding, A = Application, HA = Higher Ability					

Units	***Area***	***Subject Matter***	***ETP***
1	*Algebra*	- *Ordered Pairs* - *Cartesian product* - *Ways of representation of a Cartesian product (Set of ordered pairs, Arrow diagram, tabular from only)*	*8*
2	*Coordinate geometry*	- *Distance formula.* - *Application of distance formula.*	*10*
3	*Trigonometry*	- *Measurement of angles.* - *Three system of measurement of angles with their relation.* - *Problems related to angle made by the hands of clock by separate hands.*	*14*
4	*Transformation*	- *Introduction of transformation.* - *Types of transformation* - *Reflection (x-axis, y-axis, x=y, y=x (by using formula with their graphs)*	*8*
5	*Statistics*	- *Mean (individual and discrete data)* - *Median (individual and discrete data)*	*2*
6	*Matrix*	- *Introduction of matrix.* - *Order of the matrix.* - *Formation of matrix of order (1×2, 2×1 and 2×2).* - *Types of matrix (Row, column, null, rectangular, square, diagonal, scalar, identity only)*	*7*

Half Yearly Exam

S.N.	Contents	K	U	A	HA
1	*Algebra*	1	2		1
2	*Matrix*	1	1	1	
3	*Co-ordinate Geometry*	1	1	1	1
4	*Trigonoetry*	2	2	1	
5	*Transformation*	1		1	
6	*Statistics*		1	1	
	Total Questions	**6**	**7**	**5**	**2**
	Total	**6×1=6**	**7×2=14**	**5×4=20**	**2×5=10**

Units	***Area***	***Subject Matter***	***ETP***
1	*Algebra*	- *Relation* - *Domain and range of relation* - *Inverse relation* - *Ways of representation of relation(Set of ordered pairs, arrow diagram, description, table only)*	*15*

		- *Introduction of polynomials.* - *Degree, standard form and four fundamental operations of polynomials.*	
2	*Coordinate geometry*	- *Section formula for external and internal division.* - *Mid-point formula.* - *Slope and co linearity.*	*10*
3	*Trigonometry*	- *Identification of P, b and h of a right angled triangle with reference angle.* - *Introduction of Pythagoras theorem and its application.* - *Introduction of six trigonometrical ratios.* - *General simplification of trigonometrical ratios.* - *Proving trigonometrical identities.*	*18*

Second Term

S.N.	Contents	K	U	A	HA
1	*Algebra*	1	1	1	
2	*Co-ordinate Geometry*	1	1		1
3	*Trigonoetry*	1	2	1	
4	*Transformation*	1	1	1	
5	*Statistics*		1	1	
6	*Vector*	1	1		1
7	*Matrices*	1		1	
	Total Questions	**6**	**7**	**5**	**2**
	Total	**6×1=6**	**7×2=14**	**5×4=20**	**2×5=10**

Units	***Area***	***Subject Matter***	***ETP***
1	*Matrix*	- *Equality of two matrices.* - *Addition and subtraction of matrices.* - *Multiplication of matrix by a scalar.*	*7*
2	*Trigonometry*	- *Conversion of trigonometric ratios.* - *Values of trigonometrical ratios in some standard angles (0^0,30^0,45^0,60^0,90^0)*	*16*
3	*Statistics*	- *Quartiles (individual and discrete data)* - *Mode (individual and discrete data)*	*8*
4	*Vector*	- *Introduction of vector.* - *Directed line segment.* - *Components of vector.* - *Magnitude of vector.* - *Direction of vector (vector lies on 1^{st} quad. Only)* - *Types of vector (row, column zero, position, unit only)* - *Operation of vectors (Addition and subtraction of vectors and multiplication of a vector by a scalar)*	*10*

Final Term

Specific grid for BLE Exam

S.N.	Contents	K	U	A	HA	Total Marks
1	*Algebra*	1	1	1		7
2	*Co-ordinate Geometry*	1	1		1	8
3	*Trigonometry*	1	2	1		9
4	*Transformation*	1		1		5
5	*Statistics*		1	1		6
6	*Vector*	1	1		1	8
7	*Matrices*	1	1	1		7
	Total Questions	**6**	**7**	**5**	**2**	
	Total	**6×1=6**	**7×2=14**	**5×4=20**	**2×5=10**	**50**

Units	***Area***	***Subject Matter***	***ETP***
1	*Transformation*	- *Rotation ($\pm 90^0$, $\pm 180^0$ about origin) (by using formula with their graphs)*	*7*

Strategic Course Division -2081

Opt. Maths

Class:- IX

First Term

S.N.	Contents	K	U	A	HA
1	*Algebra*	2	2	3	1
2	*Matrix*	1	1	1	
3	*Co- ordinate*	2	1	3	1
4	*Trigonometry*	3	2	3	
5	*Transformation*	1	1	1	1
6	*Vector*	1	1		1
	Total Questions	**10**	**8**	**11**	**4**
	Total	**10×1=10**	**8×2=16**	**11×3=33**	**4×4=16**
K= Knowledge, U = Understanding, A = Application, HA = Higher Ability					

Subject Matter		***ETP***
Topics	***Sub- Topics***	
1. Algebra	*Relation and Function* *- Ordered pairs* *- Cartesian product.* *- Introduction and relation, types of relation, ways of representation of relation,* *- Domain and range of relation.* *- Introduction of function, notation, domain, co-domain, image, pre-image and range.* *- Ways of representation of function, vertical line test of function.* *- Types of function. (on to, into, one-to-one, many- to-one)*	***12***
2. Matrix	*Introduction, order and components of matrix.* *- Types of matrix (Row, column, Null, Square, Diagonal, Scalar, Indentity, Equal, Symmetric and triangular.)* *- Addition and subtraction.* *- Properties of matrix addition.*	***6***
3. Co-ordinate Geometry	*- Division of a line segment in a given ratio.* *- Introduction and Equation of locus.*	***10***
4. Trigonometry	*- Measurement of angles (Sexagesimal , centesimal and radian system)* *- Relation between the system of measurement of angles.*	***10***
5.Transformation	*- Introduction to Transformation* *- Types of transformation (Isometric and non-isometric only)* *- Reflection on y=x, y=-x, x=a and y=b (By using graph and formula)* *- Translation (From graph and formula)*	***10***
3. Vector	*Introduction of vector and its types (Row, Column, Position, Unit, Null, Equal and Negative)* *- Equal and unequal vectors* *- Magnitude and direction of vector* *- Operation of vector:* ** Multiplication of vector by a scalar (conditions of vectors being parallel)* ** Addition and subtraction of vector* ** Law of vector addition.*	***15***

Half Yearly Exam

S.N.	Contents	K	U	A	HA
1	*Algebra*	2	2	3	1
2	*Matrix*	1	1	1	
3	*Co- ordinate*	2	1	3	1
4	*Trigonometry*	3	2	3	
5	*Transformation*	1	1	1	1
6	*Vector*	1	1		1
	Total Questions	**10**	**8**	**11**	**4**
	Total	**10×1=10**	**8×2=16**	**11×3=33**	**4×4=16**

Subject Matter		***ETP***
Topics	***Sub- Topics***	
1. Matrix	- *Multiplication of matrix by a scalar.* - *Transpose of matrix.* - *Multiplication of matrices* - *Properties of matrix multiplication (closure, associative and distributive)*	***12***
2. Co-ordinate geometry	*Area of triangle and quadrilateral by using co-ordinates*	***8***
3. Trigonometry	- *Introduction of trigonometric ratio.* - *Problem related to identity of trigonometric ratios ($\sin^2\theta + \cos^2\theta = 1$, $= \tan\theta$ etc) and their conversion*	***22***
4 Transformation	*Enlargement and reduction having centre (a, b) with scale factor k. (From graph and formula)*	***5***

Second Term

S.N.	Contents	K	U	A	HA
1	*Algebra*	2	2	2	1
2	*Matrix*	1	1	1	
3	*Co- ordinate*	2	1	2	1
4	*Trigonometry*	2	2	4	
5	*Vector*	1	1		1
6	*Transformation*	1		1	1
7	*Statistics*	1	1	1	
	Total Questions	**10**	**8**	**11**	**4**
	Total	**10×1=10**	**8×2=16**	**11×3=33**	**4×4=16**

Subject Matter		***ETP***
Topics	***Sub- Topics***	
1. Algebra	*Polynomials* - *Introduction and classification (on the basis of function)* - *Degree of polynomial, standard form and equal polynomials* - *Addition, subtraction and multiplication of polynomials*	***6***
1. Co-ordinate geometry	*Equation of straight line* - *Parallel to the axes.* - *Slope intercept form*	***15***

	- *Intercept form* - *Perpendicular form*	
2. Trigonometry	- *Trigonometric ratio of standard angles ($0^\circ, 30^\circ, 45^\circ, 60^\circ, 90^\circ$) (By using the concept of unit circle)* - *Trigonometric ratio of $90^\circ \pm \theta$, $180^\circ \pm \theta$, $270^\circ \pm \theta$, $360^\circ \pm \theta$ and $(-\theta)$*	***12***
4. Transformation	- *Rotation through $\pm 90^\circ, \pm 180^\circ, 360^\circ$ about (a,b) (By using graph and formula)*	***6***
5. Statistics	- *Quartiles, Quartile deviation and its co-efficient (individual and discrete series)* - *Deciles and percentiles (individual and discrete series)*	***12***

Final Term

S.N.	Contents	K	U	A	HA	Total Q	Marks
1.	*Algebra*	2	2	2	1	7	16
2.	*Limit and continuity*	1		1		2	4
3.	*Matrix*	1	1	1		3	6
4.	*Co-ordinate Geometry*	2	1	1	1	5	11
5.	*Trigonometry*	2	2	3		7	15
6.	*Vectors*	1	1		1	3	7
7.	*Transformation*	1		1	1	3	8
8.	*Statistics*		1	2		3	8
	Total questions	**10**	**8**	**11**	**4**	**33**	**75**
	Total	**10×1=10**	**8×2=16**	**11×3=33**	**4×4=16**	**75**	

Subject Matter		***ETP***
Topics	***Sub- Topics***	
1 Algebra	*Sequence and series* - *Introduction and general term of sequence.* - *Introduction of series and use of Σ notation.*	***8***
2 Limit and continuity	*Basic concept of limit value:* ** From numeric sequence.* ** On the basis of diagrammatic sequence.* ** On the basis of the sum of infinite sequence.* ** Value of function.* ** Concept of limit value of function.* ** Symbolic representation of limit value.* ** Introduction and meaning of $x \to a$.*	***10***
3. Co-ordinate geometry	- *Reduction of $Ax+By+C=0$ in three standard form.* - *Equation of st line (point slope form and two points form)* - *Distance between a point and a straight line.*	***10***
4. Trigonometry	*Trigonometric ratios of compound angles.*	***10***
6. Stastics	- *Mean deviation and its co-efficient from mean and median. (Individual and discrete series)* - *Standard deviation and its co-efficient. (Individual and discrete series.)*	***8***

Strategic Course Division -2081

Opt. Maths

Class:- X

First Term

S.N.	Contents	K	U	A	HA
1	*Algebra*	3	2	3	2
2	*Matrix*	2	2	2	
3	*Co-ordinate Geometry*	2	2	2	2
4	*Trigonometry*	3	2	4	
	Total Questions	**10**	**8**	**11**	**4**
	Total	**10×1=10**	**8×2=16**	**11×3=33**	**4×4=16**

Subject Matter		***ETP***
Topics	***Sub- Topics***	
1. Algebra	*Algebraic and Trigonometric Function with their graphs* *($y = mx + c$, $y = ax^3$, $a \neq 0$, $y = ax^2$, $a \neq 0$, $y = sinA$, $y = cosA$, $y = tanA$ $(-2\pi \leq A \leq 2\pi)$)* *- Inverse function* *- Composite function* *Polynomials* *- Operation of polynomials (multiplication, division, and synthetic division method)* *- Remainder theorem* *- Factor theorem* *Linear programming problems* *- Linear inequalities (to find inequality with the help of a graph)* *- To find maximum and minimum values with the help of a graph*	*21*
2. Matrices	*- Determinants (up to 2×2 matrix only)* *- Inverse of a matrix* *- Solution of a system of linear equations by using matrix method and Cramer's rule*	*11*
3. Co-ordinate Geometry	*- Angle between two lines* *- Pair of straight lines*	11
4.Trigonometry	*- Trigonometric ratios of multiple angles* *- Trigonometric ratios of sub- multiple angles (sin, cos /tan only)* *- Transformation of trigonometric ratios*	18

Half Yearly Exam

S.N.	Contents	K	U	A	HA
1	*Algebra*	2	2	2	1
2	*Matrix*	1	1	1	
3	*Co-ordinate Geometry*	2	1	1	2
4	*Trigonometry*	3	2	3	
5	*Statistics*		1	2	
6	*Transformation*	1		1	1
7	*Continuity*	1	1	1	
	Total Questions	**10**	**8**	**11**	**4**
	Total	**10×1=10**	**8×2=16**	**11×3=33**	**4×4=16**

Subject Matter		***ETP***
Topics	***Sub- Topics***	

Algebra	*Sequence and series* - *Arithmetic progression:(introduction, general term, mean, Sum of first n terms of a series)* - *Geometric progression :(introduction, general term, mean, Sum of first n terms of a series)* - *Relation between arithmetic mean and geometric mean* - *Sum of the first n natural numbers (Even and odd)*	**15**
Continuity	- *Continuity and discontinuity of set of numbers (natural, whole, rational, real numbers.)* - *Continuity and Discontinuity of different sets of numbers (by number line and construction)* - *Discontinuity of function by graph and symbolic representation*	6
Trigonometry	- *Conditional trigonometric identities [A + B + c = π , + + = only]*	6
Statistics	- *Quartile deviation and its coefficient* - *Mean deviation and it's coefficient (from mean and median)* - *Standard deviation* - *Coefficient of variation*	12
Transformation	- *Combined transformation*	8

Third Term Exam

S.N.	Contents	K	U	A	HA	Total Q	Marks
1.	*Algebra*	2	2	2	1	7	16
2.	*Limit and continuity*	1		1		2	4
3.	*Matrix*	1	1	1		3	6
4.	*Co-ordinate Geometry*	2	1	1	1	5	11
5.	*Trigonometry*	2	2	3		7	15
6.	*Vector*	1	1		1	3	7
7.	*Transformation*	1		1	1	3	8
8.	*Statistics*		1	2		3	8
	Total questions	**10**	**8**	**11**	**4**	**33**	**75**
	Total	**10×1=10**	**8×2=16**	**11×3=33**	**4×4=16**	**75**	

Subject Matter		***ETP***
Topics	***Sub- Topics***	
Trigonometry	- *Trigonometric equations* - *Height and Distances*	12
Algebra	- *Quadratic equation and graph* - *Graph of quadratic function* - *Graph of cubic function* - *Solution of simultaneous linear and quadratic equations (graphical and substitution method)*	5
Vector	- *Scalar product of a vector (condition for perpendicular also)* - *Vector Geometry*	15
Transformation	- *Inversion transformation* - *Inversion circle* - *Transformation using matrices*	12

Coordinate Geometry	- *Circle* - *Conic sections Introduction and its types on the basis of intersection of cone and plane surface.*	12