



GOA BOARD OF SECONDARY AND HIGHER SECONDARY EDUCATION
ALTO BETIM – GOA 403 521.

Class : IX
Subject : Mathematics

- (a) To distribute the topics for 1st and 2nd Term and their weightage for class IX.
(b) For the summative (Terminal Exam) Question paper of class IX under the common pattern which follows:

The weightage or the distribution of marks over different dimensions of the question paper shall be as follows:

1. Weightage to Learning Outcomes

S.No.	Learning Outcomes	Marks	Percentage of Marks
1	Knowledge	16	20 %
2	Understanding	16	20 %
3	Application	32	40 %
4	Skill	16	20 %
Total :		80	100 %

2. Weightage to Content / Subject Units

Chapter No.	Name of Chapter	Marks
	Section A	
4	Linear Equations in Two variables	10 mks}
14	Statistics	16 mks} 32 mks
15	Probability	06 mks}
	Core content of first term	
1.	Number System(irrational numbers, decimal representation)	3mks} 8mks
2	Polynomials(Remainder theorem, factorisation , algebraic identities)	5mks}
		Total 40 mks

	Section B	
9	Areas of Parallelograms and Triangles	6 mks}
10	Circles	8 mks} 32 mks
12	Heron's Formula	6 mks}
13	Surface Areas and Volumes	12 mks}
	Core content of first term	
6	Lines and angles(Types of angles, pair of angles)	2mks}
7	Triangles(Congruence of triangles)	3 mks} 8 mks
11	Constructions(Constructions of triangles)	3 mks}
		Total 40 mks
	TOTAL Sec A & Sec B	80 MARKS

3.Weightage to Forms of Questions

S.No.	Form of Questions	Marks for each question	Number of questions	Total Marks
1.	Long Answer Type (LA)	03	14	42
2.	Short Answer Type (SA -I I)	02	14	28
3.	Short Answer Type (SA – I)	01	03	03
4	Very Short Answer Type (VSA)	01	07	07
Total				80

The expected time for different types of question would be as follows:

S.No	Form of Questions	Approx. time for each Question in mins (t)	Number of questions (n)	Approx. time for each form of Questions in mins (n x t)
1.	Long Answer Type (LA)	06	14	84
2.	Short Answer Type (SA-II)	04	14	56
3.	Short Answer type (SA-I)	01	03	03
4	Very Short Answer type(VSA)	01	07	07
Total				150 min (2½ hrs)

As the total time is calculated on the basis of the number of questions required to be answered and the length of their anticipated answers, it would, therefore, be advisable for the candidates to budget their time properly by cutting out the superfluous words and be within the expected time limits.

4. Scheme of Options

(There will be no overall choice. However, there may be an internal choice)

5. Weightage to difficulty level of questions:

Sr. No.	Estimated difficulty level of questions	Marks	Percentage
1.	Easy	10	12.5%
2.	Average	38	47.5%
3.	Difficulty	32	40%
Total		80	100%

A question may vary in difficulty level from individual to individual. As such, the assessment in respect of each question will be made by the paper setter on the basis of general anticipation from the group as a whole taking the examination. This provision is only to make the paper balanced in weightage, rather than to determine the pattern of marking at any stage.

6. Number of Main Questions :

There will be 8 main questions, each main question of 10 mark.

DESIGN OF THE QUESTION PAPER**Class : IX****(FIRST TERM EXAMINATION)****Time : 2½ hrs****Subject : Mathematics****Max.Marks : 80 marks**

The weightage or the distribution of marks over different dimensions of the question paper shall be as follows:

1. Weightage to Learning Outcomes

S.No.	Learning Outcomes	Marks	Percentage of Marks
1	Knowledge	16	20 %
2	Understanding	16	20 %
3	Application	32	40 %
4	Skill	16	20 %
Total :		80	100 %

2. Weightage to Content / Subject Units

Chpt No.	Name of the chapter	Marks
	Section A	
1.	NUMBER SYSTEM	12
2.	POLYNOMIALS	20
3.	COORDINATE GEOMETRY	08
	Section B	
5.	INTRODUCTION TO EUCLID'S GEOMETRY	03
6.	LINES AND ANGLES	09
7.	TRIANGLES	10
8.	QUADRILATERALS	09
11.	CONSTRUCTIONS	09
Total		80

3. Weightage to Forms of Questions

S.No.	Form of Questions	Marks for each question	Number of questions	Total Marks
1.	Long Answer Type (LA)	03/04	06/03	30
2.	Short Answer Type (SA - I)	01	14	14
3.	Short Answer Type (SA - II)	02	11	22
4	Very Short Answer Type (VSA)	01	14	14
Total				80

The expected time for different types of question would be as follows:

S.No	Form of Questions	Approx. time for each Question in mins (t)	Number of questions (n)	Approx. time for each form of Questions in mins (n x t)
1.	Long Answer Type (LA)	06/08	06/03	60
2.	Short Answer Type (SA-I)	02	14	28
3.	Short Answer type (SA-II)	04	11	44
4	Very Short Answer type(VSA)	01	14	14
Total :				146 (2½ hrs)

As the total time is calculated on the basis of the number of questions required to be answered and the length of their anticipated answers, it would, therefore, be advisable for the candidates to budget their time properly by cutting out the superfluous words and be within the expected time limits.

4. Scheme of Option.

(There will be no overall choice. However, there may be an internal choice)

5. Weightage to Difficulty level of questions:

Sr. No.	Estimated difficulty level of questions	Marks	Percentage
1.	Easy	14	17.5%
2.	Average	40	50.0%
3.	Difficulty	26	32.5%
Total		80	100%

A question may vary in difficulty level from individual to individual. As such, the assessment in respect of each question will be made by the paper setter on the basis of general anticipation from the group as a whole, taking the examination. This provision is only to make the paper balanced in weightage, rather than to determine the pattern of marking at any stage.

6. Number of Main Questions :

There will be 8 main questions, each main question of 10 mark.

DESIGN OF THE QUESTION PAPER**Class : IX****(FIRST MID TERM TEST)****Time : 1 hr****Subject : Mathematics****Max.Marks : 20 marks**

The weightage or the distribution of marks over different dimensions of the question paper shall be as follows:

1. Weightage to Learning Outcomes

S.No.	Learning Outcomes	Marks	Percentage of Marks
1	Knowledge	04	20 %
2	Understanding	04	20 %
3	Application	08	40 %
4	Skill	04	20 %
Total :		20	100 %

2. Weightage to Content / Subject Units

Chpt No.	Name of the chapter	Marks
	Section A	
1.	Number System	06
3.	Coordinate Geometry	04
	Section B	
5.	Introduction to Euclid's Geometry	02
6.	Lines and angles	08
Total		20

3. Weightage to Forms of Questions

S.No.	Form of Questions	Marks for each question	Number of questions	Total Marks
1.	Long Answer Type (LA)			
2.	Short Answer Type (SA - I)			
3.	Short Answer Type (SA - II)			
4.	Very Short Answer Type (VSA)			

The expected time for different types of question would be as follows:

S.No	Form of Questions	Approx. time for each Question in mins (t)	Number of questions (n)	Approx. time for each form of Questions in mins (n x t)
1.	Long Answer Type (LA)			
2.	Short Answer Type (SA-I)			
3.	Short Answer type (SA-II)			
4.	Very Short Answer type(VSA)			
Total :				

As the total time is calculated on the basis of the number of questions required to be answered and the length of their anticipated answers, it would, therefore, be advisable for the candidates to budget their time properly by cutting out the superfluous words and be within the expected time limits.

4. Scheme of Options

(There will be no overall choice. However, there may be an internal choice)

5. Weightage to Difficulty level of questions:

Sr. No.	Estimated difficulty level of questions	Marks	Percentage
1.	Easy		
2.	Average		
3.	Difficulty		

A question may vary in difficulty level from individual to individual. As such, the assessment in respect of each question will be made by the paper setter on the basis of general anticipation from the group as a whole taking the examination. This provision is only to make the paper balanced in its weightage, rather than to determine the pattern of marking at any stage.

6. Number of Main Questions :

There will be 2 main questions, each main question of 10 mark.

DESIGN OF THE QUESTION PAPER

Class : IX
Time : 1 hr

(II nd MID TERM TEST)
Subject : Mathematics

Max.Marks : 20 marks

The weightage or the distribution of marks over different dimensions of the question paper shall be as follows:

1. Weightage to Learning Outcomes

S.No.	Learning Outcomes	Marks	Percentage of Marks
1	Knowledge	04	20 %
2	Understanding	04	20 %
3	Application	08	40 %
4	Skill	04	20 %
Total :		20	100 %

2. Weightage to Content / Subject Units

Cppt No.	Name of the chapter	Marks
	SECTION A	
4.	Linear Equation in two variable	06
15.	Probability	04
	SECTION B	
9.	Area of parallelograms and triangles	05
12	Heron's formula	05
Total		20

3. Weightage to Forms of Questions

S.No.	Form of Questions	Marks for each question	Number of questions	Total Marks
1.	Long Answer Type (LA)			
2.	Short Answer Type (SA - I)			
3.	Short Answer Type (SA – II)			
4	Very Short Answer Type (VSA)			

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1.	Long Answer Type (LA)			
2.	Short Answer Type (SA-I)			
3.	Short Answer type (SA-II)			
4	Very Short Answer type(VSA)			
Total :				

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6. Number of Main Questions :

There will be 2 main questions, each main question of 10 mark.

Goa Board of Secondary & Higher Secondary Education, Alto, Betim-Goa

SID IX 1ST TERM EXAMINATION

BLUE - PRINT S.S.C. / H.S.S.C Examination

Maximum Marks :- 80

Duration $2\frac{1}{2}$ hours

Subject: MATHEMATICS

Objective	KNOWLEDGE			UNDERSTANDING			APPLICATION				SKILL					Total
	V.S.A	S.A.I	S.A.II	L.A.	V.S.A	S.A.I	S.A.II	L.A.	V.S.A	S.A.I	S.A.II	L.A.	V.S.A	S.A.I	S.A.II	
Content Area																
SECTION A																
Chapter 1 NUMBER SYSTEM	1(1)	1(1)	-	-	-	3(1)	-	-	-	2(2)	-	1(3)	-	-	-	12
Chapter 2 POLYNOMIALS	2(1)	2(1)	2(1)	-	-	2(3)	-	1(1)	-	-	-	-	-	-	-	20
Chapter 3 COORDINATE GEOMETRY	-	-	-	-	1(1)	1(1)	-	-	2(1)	-	-	2(2)	-	-	-	08
SECTION B																
Chapter 5 INTRODUCTION TO EUCLID'S GEOMETRY	-	2(1)	-	-	-	-	-	1(1)	-	-	-	-	-	-	-	03
Chapter 6 LINES AND ANGLES	-	-	2(2)	-	-	-	-	-	-	1(2)	1(3)	-	-	-	-	09
Chapter 7 TRIANGLES	1(1)	1(1)	-	-	1(3)	-	-	1(1)	-	-	-	-	-	-	-	10
Chapter 8 QUADRILATERALS	-	-	-	-	-	1(2)	-	1(1)	-	-	2(3)	-	-	-	-	09
Chapter 11 CONSTRUCTIONS	-	-	-	-	-	-	-	-	-	-	-	1(4) 1(3)	2(1)	-	-	09

Note:

16 marks

16 marks

32 marks

16 marks

- * Number in the bracket indicate marks
- * Number outside the bracket indicate number of questions.

FIRST TERMINAL EXAMINATION – STD IX

SUB: MATHEMATICS

MARKS: 80

TIME: 2½ Hrs

Q 1. A] Select and write the most appropriate alternative from those given in the brackets. –(1)

The only irrational number of the following is _____

[$\frac{7}{2}$, $\sqrt{225}$, $\sqrt{75}$, 0.72]

B] Attempt the following.

–(2)

(i) Find the value of: $(125)^{\frac{2}{3}}$

(ii) Express $\frac{16}{11}$ in the decimal form.

C] Represent $\sqrt{3}$ on a number line.

–(3)

D] (i) Express $0.\overline{27}$ in the form $\frac{p}{q}$ where p and q are integers, $q \neq 0$

–(2)

(ii) Simplify: $(\sqrt{3} + \sqrt{7})^2$

–(2)

Q 2. A] Select and write the most appropriate alternative from those given in the brackets. –(1)

The degree of the polynomial $7x^5 - 2x^3 + 9$ is _____

[-2, 3, 5, 9]

B] Evaluate using suitable identity

–(2)

(ii) 97×103

B] Attempt the following.

–(3)

(i) Find the value of polynomial $4x^2 - 9x + 2$ at $x = -3$

(ii) Verify whether $y = 2$ is a zero of the polynomial $3y + 7$

(iii) Expand using suitable identity: $(3x + 2y)(3x - 2y)$

D] (i) Factorise: $3x^2 + 10x + 8$ (by splitting the middle term)

–(2)

(ii) Find the value of 'k' if $(x - 1)$ is a factor of $2x^3 - 5x^2 + 8x + k$

–(2)

Q 3. A] Select and write the most appropriate alternative from those given in the brackets. –(1)

The point that lies in quadrant IV is _____

[(0, 4), (3, 5), (-1, 4), (3, -5)]

B] Rationalise the denominator of the following.

–(2)

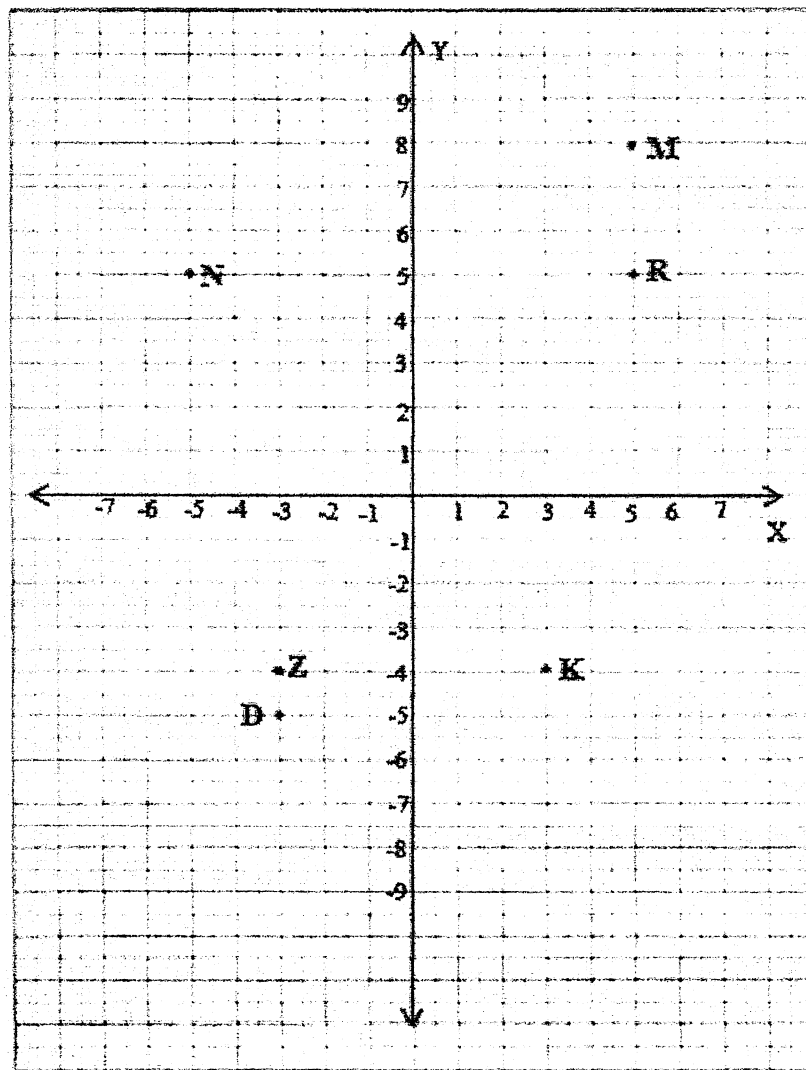
$$\frac{10}{\sqrt{5} - \sqrt{3}}$$

- C] (i) Write the abscissa of the point A (5, -7) -(1)
 (ii) Write the coordinates of the origin. -(1)
 (ii) What is the distance of point (-4, 6) from y-axis? -(1)

D] (i) On the graph paper provided to you, using a suitable scale plot the following points.

A(-2, -5), B(3, 0), C(-5, 4), D(0, 2) -(2)

(ii) With reference to the following graph, answer the questions given below. -(2)



- (i) Write the ordinate of point D
 (ii) Write the abscissa of point N
 (iii) Write the point whose coordinates are (-5, 5)
 (iv) Write the coordinates of point Z
-

Q4. A] Select and write the most appropriate alternative from those given in the brackets. -(1)

The coefficient of x^2 term in $4x - x^2 + 5x^4$ is _____

[-1, 1, 0, 4]

B] Using remainder theorem find the remainder when the polynomial $4x^3 - 3x^2 + 2x + 1$ is divided by $x - 1$ -(2)

C] Attempt the following. -(3)

(i) Factorise: $a^3 + 27b^3 + 9a^2b + 27ab^2$

(ii) Expand: $(2a - b + c)^2$

D] Divide the polynomial $P(x) = 2x^3 + 9x^2 + x - 15$ by $g(x) = 2x + 3$ and find the quotient and remainder. Hence write your answer in the form:

Dividend = Divisor \times Quotient + Remainder -(4)

Q5. A] Select and write the most appropriate alternative from those given in the brackets. -(1)

The number of ^{(line(s))} that can pass through two distinct points is _____

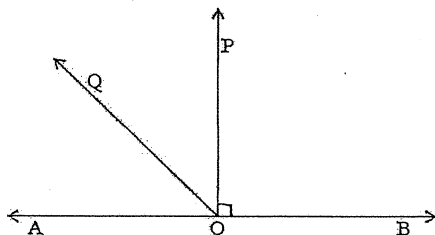
[One, Two, Three, Infinite]

B] In the figure given below if $PS = QR$ then Prove that $PR = QS$ -(2)



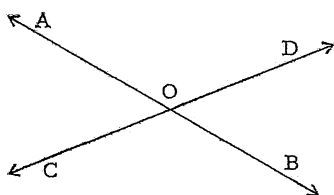
C] In the figure given below AOB is a line. Ray $OP \perp$ line AB. Another ray OQ lies between rays OA and OP

Prove that: $\angle POQ = \frac{1}{2} (\angle BOQ - \angle AOQ)$ -(3)



D] (i) Given: Line AB and line CD intersect at point O.

Prove that: $\angle AOC = \angle DOB$ -(2)

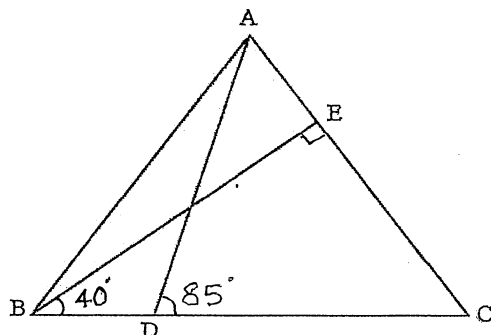


(ii) In the figure given below $BE \perp AC$, $\angle EBC = 40^\circ$, $\angle ADC = 85^\circ$

–(2)

Find: (a) $\angle ACB$

(b) $\angle CAD$



Q 6. A] Select and write the most appropriate alternative from those given in the brackets. –(1)

In $\triangle ABC$, $AB = AC$ and $\angle A = 80^\circ$ then $\angle C =$ _____

[10° , 40° , 50° , 100°]

B] Using a pair of compasses and a ruler construct $\angle XYZ = 75^\circ$

–(2)

C] Construct $\triangle PQR$ in which $\angle Q = 60^\circ$, $QR = 7.5$ cm and $PQ + QR = 12$ cm.

–(3)

D] Construct $\triangle PBM$ in which $\angle B = 30^\circ$, $\angle M = 90^\circ$ and $PB + BM + PM = 13$ cm.

–(4)

Q 7. A] Select and write the most appropriate alternative from those given in the brackets. –(1)

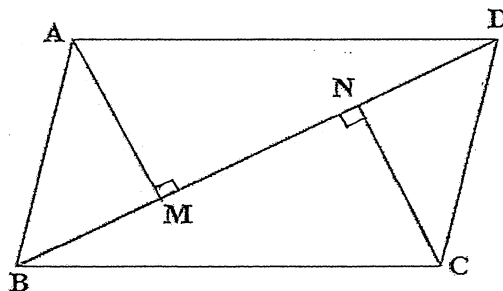
The angles of a quadrilateral are in the ratio 3:4:5:6, then the measure of the smallest angle is _____ $^\circ$

[15, 30, 60, 90]

B] Given: ABCD is a parallelogram. AM and CN are perpendiculars drawn from vertices A and C on diagonal BD.

Show that: $\triangle AMD \cong \triangle CNB$

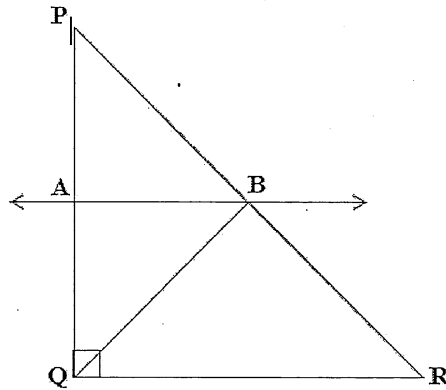
–(2)



- C] Given: PQR is a triangle right angled at Q. A line drawn through the midpoint B of hypotenuse PR and parallel to QR intersects PQ at A.

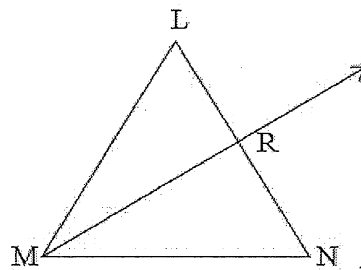
Show that: $BQ = \frac{1}{2} PR$

-(3)



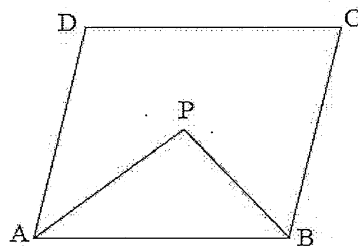
- D] (i) In $\triangle LMN$, MR is perpendicular bisector of LN. State the test by which $\triangle LMR$ and $\triangle NMR$ are congruent.

-(1)



- (ii) In parallelogram ABCD bisectors of $\angle A$ and $\angle B$ intersect at P. Prove that: $m\angle APB = 90^\circ$

-(3)



- Q 8. A] ABC is a triangle such that $\angle A = 50^\circ$ and $\angle C = 60^\circ$. Name the longest side of the triangle.

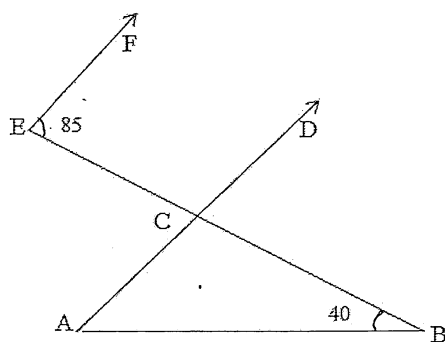
-(1)

- B] In the adjoining figure $\angle B = 40^\circ$ and $AD \parallel EF$, $\angle FEB = 85^\circ$

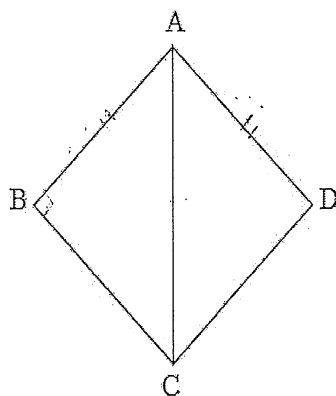
Find: (i) $\angle BCD$

(ii) $\angle BAC$

-(2)



C] In the adjoining figure, $AB \perp BC$ at B and $AD \perp CD$ at D, $BA = AD$



With reference to the figure answer the following questions.

-(3)

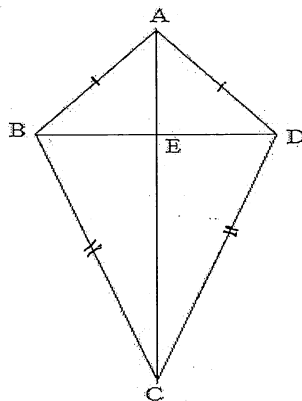
- (i) Why is $\angle ABC = \angle ADC$?
- (ii) Name the side common to $\triangle ABC$ and $\triangle ADC$.
- (iii) State the rule by which the above two triangles are congruent.

D] In the adjoining figure ABCD is a quadrilateral in which $AB = AD$ and $BC = DC$.

Prove that: (i) AC bisects $\angle A$

(ii) $BE = ED$

-(4)



END

31 A Select and Write The most appropriate alternative (1)
from those provided in the bracket.

The solution of Equation $2x - 3y = k$ is $(2, -2)$, then
the value of k is $\underline{\hspace{2cm}}$ $[-2, 2, 10, -10]$

(B) Attempt the following

(1) Write the Equation of x -axis (1)

(2) Write any two solutions of the Linear Equation (2)
 $2x - y = 10$

(C) Attempt the following

(1) Lending of library book has fixed charges for the (1)
first 3 days. Govind paid ₹ 27 for the book he
kept for 7 days. Write the statement in Linear
Equation in two variable

(2) Give the Geometric Representation of $2x - 5 = 0$ (2)
on the Graph paper in ~~Two~~ Two Variable

(D) Draw the Graph for the following Equation (3)
 $3x + y = 11$ (Take at least three points)

32 A Select and Write the most appropriate alternative (1)
from those provided in the brackets.

The value of $(32)^{\frac{2}{5}}$ is $\underline{\hspace{2cm}}$ $(2, 4, 6, 8)$

(B) Attempt the following

(1) A box contains 5 Red, 7 blue and 10 Green (2)
coloured marbles. If one marble is drawn at
random. find the probability of getting

(a) Green marble

(b) Not a red marble

Q2c 80 plants ^{each} were planted by 50 schools during Van Mahotsava. After 3 months the number of plants that survived were recorded as below. (3)

36, 24, 50, 78, 70, 71, 78, 68, 45, 41
 33, 25, 62, 63, 23, 69, 55, 40, 39, 18.
 25, 72, 72, 65, 37, 48, 51, 70, 23, 17
 51, 30, 29, 47, 29, 75, 71, 65, 45, 37,
 39, 44, 53, 71, 62, 32, 32, 34, 25, 29,
 72, 62, 55, 19, 61, 43, 43, 61, 47, 57,
 75, 48, 57, 28, 75, 39, 39, 71, 75, 33,

Construct a frequency distribution table by taking class interval as 20-30, 30-40 and so on.

Q2D Attempt the following

- (1) Two coins were tossed simultaneously. Find the probability of getting (2)
 (a) only head
 (b) At least one head

(2) Factorise $(2x - y - 3z)^2$ by using suitable identity (2)

Q3A Select and Write the most appropriate alternative (1)
 from those provided in the bracket.

The class mark of class interval 15-25 is (20, 15, 25, 10)

(B) In the city, the following weekly observation were made in a study on the cost of Living Index. Draw frequency polygon for data without histogram

Cost of Living Index	140-150	150-160	160-170	170-180	180-190	190-200
No. of weeks	5	10	18	9	6	2

Q3 (c) find the mean salary of 50 Workers of a factory (3) from following table.

Salary in ₹	Number of Workers	$f \cdot x_i$
2000	14	
3000	10	
4000	08	
5000	06	
6000	04	
7000	04	
8000	02	
9000	02	
TOTAL	50	$\Sigma f \cdot x_i = \dots$

Q3 D The Daily Earning of 30 Workers are given below (3)

Daily earning in ₹	No of workers	
0-50	3	
50-100	7	
100-150	4	
150-200	5	
200-250	4	
250-300	6	
300-350	3	
350-400	2	

Draw the Histogram to represent the data.

Q4 A Select and Write the most appropriate alternative from those provided in the bracket (1)

The zero of Polynomial $2x+3$ is

$(-3, 3, -\frac{3}{2}, \frac{3}{2})$

(B) By using Suitable Scale, Plot $\sqrt{2}$ on number line (2)

(C) Attempt the following

Following are the Runs scored by Anil Kumble in his last 11 one day international. With the help of data find (1) Mode (2) median and (3) Range of the data (3)

17, 23, 25, 18, 17, 23, 19, 23, 17, 26, 23

(D) Attempt the following

(1) A dice is thrown once, find the Probability of getting (2)

(a) Prime number (b) number less than 5

(2) Factorise $4x^2 + 12x - 7$ by splitting middle term (2)

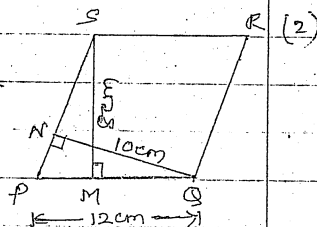
SECTION B

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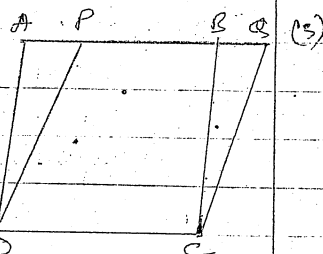
Q5. Select and Write the most appropriate alternative (1)
from those provided in the brackets

In $\parallel^{gm} ABCD$ point P lies on CD such that $C-P-D$.
If $A(\triangle APB) = 8 \text{ cm}^2$ then $A(\parallel^{gm} ABCD)$ is --- cm^2
(4, 8, 16, 24)

(B) In the given figure $\square PQRS$ is \parallel^{gm} .
With $PQ = 12 \text{ cm}$, altitudes corresponding
to PQ and SP are respectively 8 cm
and 10 cm. find SP



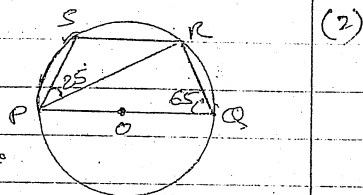
(C) Given: $\parallel^{gm} ABCD$ and $\square PQCD$ are
two parallelograms having same
base CD and lying between
same parallel lines AB and CD



Prove that: $A(\parallel^{gm} ABCD) = A(\square PQCD)$

(D) Attempt the following

(1) In the given figure, PQ is the
diameter of circle. R and S are
any other point on the circle
other than P and Q. If $\angle PQR = 65^\circ$
 $\angle RPS = 25^\circ$. find (1) $\angle PRQ$ (2) $\angle PSR$



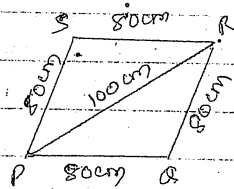
(2) The base diameter and height of right circular
cone are 14 cm and 24 cm respectively. find

- 1) Slant height of cone
- 2) Curved surface area of cone ($\pi = 22/7$)

Q.6A Select and Write the most appropriate alternative from those provided in the bracket. (1)

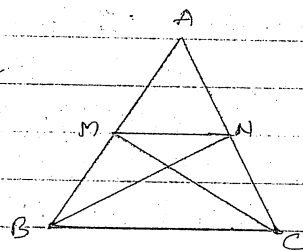
The measure of inscribed angle is k times the measure of central angle, then the value of k is
 ——— (2, $\frac{1}{2}$, 1, -1)

(B) $\square PQRS$ is a Rhombus of side 80cm and one of the diagonal is 100cm. Find the area of rhombus. (3)

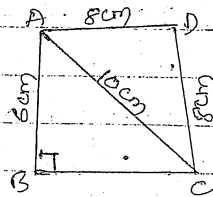


(C) Given:- M and N are points on side AB and side AC resply of $\triangle ABC$ such that $\angle BMC = \angle ANC$

Prove that:- $MN \parallel BC$



(D) Given:- In $\square ABCD$, $AB \perp BC$ if $AB = 6cm$, $AC = 10cm$, $AD = DC = 8cm$. Find Area of $\square ABCD$. (2)



Q.7A Select and Write the most appropriate alternative from those provided in the bracket. (1)

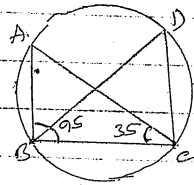
The angle which is complementary to itself is
 ——— (0, 45, 90, 180)

(B) Attempt the following.

(1) The angle in linear pair are in the ratio 1:2. Find the measure of greater angle. (1)

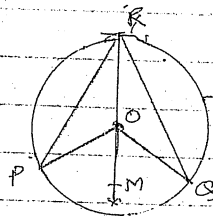
P.T.O

- (2) In the given figure $\angle ABC = 95^\circ$ and $\angle ACB = 35^\circ$ find $\angle BDC$



(2)

- (C) Given: O is the centre of circle.
Point R is on the circle other than point P and Q.



(3)

Prove that: $\angle POQ = 2\angle PRQ$

- (D) Construct $\triangle ABC$, in which $BC = 6\text{ cm}$, $\angle ABC = 45^\circ$ and $AB - AC = 2\text{ cm}$

(2)

- Q8A It cost ₹ 3300 to paint the inner C.S.A of cylindrical vessel 11 m deep. If the cost of painting is at the rate of ₹ 30 per m^2 , find (1) Inner curved surface area
(2) Radius of base (Do not substitute for π)

(2)

- (B) A classroom is 7m long, 6.5m wide and 4m high. It has one door $3\text{ m} \times 1.4\text{ m}$ and three windows each measuring $2\text{ m} \times 1\text{ m}$. The interior walls is to be painted. Find the cost of painting its four walls at the rate of ₹ 3.50 per m^2 .

(3)

- (C) If the volume of right circular cone of height 9cm is $48\pi\text{ cm}^3$. find the radius of base

(2)

- (D) The volume of cylinder is $448\pi\text{ cm}^3$ and height 7cm. find its lateral surface area.

(3)

Goa Board of Secondary & Higher Secondary Education, Alto, Betim-Goa

std IX IInd TERM EXAMINATION

BLUE - PRINT S.S.C. / H.S.S.C Examination

Maximum Marks :- 80

on 2½ hours

t: MATHEMATICS

Objective	KNOWLEDGE				20%				UNDERSTANDING 20%				APPLICATION				40%				SKILL				20%				Total
	V.S.A	S.A.I	S.A.II	L.A	V.S.A	S.A.I	S.A.II	L.A	V.S.A	S.A.I	S.A.II	L.A	V.S.A	S.A.I	S.A.II	L.A	V.S.A	S.A.I	S.A.II	L.A	V.S.A	S.A.I	S.A.II	L.A					
Content Area	V.S.A	S.A.I	S.A.II	L.A	V.S.A	S.A.I	S.A.II	L.A	V.S.A	S.A.I	S.A.II	L.A	V.S.A	S.A.I	S.A.II	L.A	V.S.A	S.A.I	S.A.II	L.A	V.S.A	S.A.I	S.A.II	L.A					
4. Equation in 2 variable	1(1)	1(1)	-	-	-	-	1(2)	-	-	1(1)	-	-	-	-	-	-	-	-	-	1(2)	1(3)	-	-	10					
4. Statistics	1(1)	-	-	-	-	-	-	1(3)	-	-	-	-	2(3)	-	-	-	-	-	-	-	-	-	-	16					
5. Probability	-	-	1(2)	-	-	-	1(2)	-	-	-	-	1(2)	-	-	-	-	-	-	-	-	-	-	-	06					
1. Linear System	1(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1(2)	-	-	-	03					
2. Polynomial	1(1)	-	-	-	-	-	1(2)	-	-	-	-	1(2)	-	-	-	-	-	-	-	-	-	-	-	05					
9. Area of Parallelogram & Δ	1(1)	-	1(2)	-	-	-	-	-	-	-	-	-	1(3)	-	-	-	-	-	-	-	-	-	-	06					
10. Circle	1(1)	-	-	-	-	-	1(2)	-	-	-	-	1(3)	-	-	-	-	-	-	-	-	-	-	-	08					
12. Area & Volume	-	-	-	-	-	-	-	1(3)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	06					
13. Area & Volume	-	-	-	-	-	-	1(2)	-	-	-	-	-	2(2)	-	-	-	-	-	-	-	-	-	-	12					
6. Angles and angles	1(1)	1(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	02					
angle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	03					
11. Fraction	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	03					

Total : 80

1. Number in the bracket indicate marks
2. Number outside the bracket indicate number of question.

Evaluation Scheme for Mathematics (Std IX) 2015-2016 onwards

1st Mid Test – Theory (1 hour) (20 Marks)

1st Term – Theory (2½ hours) (80 marks)

1st Term – Internal Assessment (20 marks)

i.e. (i) * Assignment (10 marks)

(ii) Class Response (05 marks)

(iii) Note Books (05 marks)

1st Term (120 marks)

2nd Mid Test – Theory (1 hour) (20 marks)

2nd Term – Theory (2½ hours) (80 marks)

2nd Term Internal Assessment (20 marks)

i.e. (i) ** Project (group-wise) (10 marks)

(ii) Class Response (05 marks)

(iii) Note Books (05 marks)

2nd Term (120 marks)

1st Term + 2nd Term = Grand Total = (240 marks)

Note * Criteria for Evaluation of Assignment (10 marks) (e.g. Chapter 6. Lines & Angles)

1. Preparation (Neatness, Material used) (2 marks)

2. Subject Matter (2 marks)

3. Presentation / Explanation (2 marks)

4. Creativity (2 marks)

5. Oral (Viva) (2 marks)

(10 marks)

Note: The information about the assignment should be handwritten and printouts should not be accepted.

(Pictures allowed, diagrams preferred)

(P.T.O.)

**** Criteria for Evaluation of Projects (10 marks) (e.g. Chapter 13. Surface Area & Volume)**

- | | | |
|----|--|-----------|
| 1) | Presentation and neatness | (2 marks) |
| 2) | Creativity of the activity | (2 marks) |
| 3) | Report Writing | (2 marks) |
| 4) | Individual Knowledge of child on project | (2 marks) |
| 5) | Orals | (2 marks) |

(10 marks)

Note: (1) Ready made Projects should not be accepted.

(2) Only Environment friendly materials should be used for projects.

N.B.:- (Schools are free to choose the Assignment / Projects as per the level of the school)