

	SMART SCIENCE ACADEMY MIANWALI		
	Student Name:		Class: 9th
	Subject:	Math	Marks: 75
	Chapter:	First Half Book(1,2,3,7,9,11)	Time: 2.5 hours
Date:	Crash Test Series 2025-26		

Paper Code 2025

QNO.1: Choose the correct options; (15)

1. $\sqrt{75} + \sqrt{27} =$

- a) $\sqrt{102}$ b) $9\sqrt{3}$ c) $5\sqrt{3}$ d) $8\sqrt{3}$

2. If n is not a perfect square, then $\sqrt{n}$ is;

- a) rational number b) natural number c) integer d) irrational number

3. π and e are;

- a) natural numbers b) integers c) rational numbers d) irrational numbers

4. $\log 10,000 = ?$ a) 2 b) 3 c) 4 d) 5

5. If $\log 2 = 0.3010$, then $\log 200$ is;

- a) 1.3010 b) 0.6010 c) 2.3010 d) 2.6010

6. $\log 100 = ?$ a) 2 b) 3 c) 10 d) 1

7. Who gave the idea of sets;

- a) Euclid b) Leonhard Euler c) Carl Friedrich Gauss d) Georg Cantor

8. If $A = \{ \}$, then $P(A)$ is; a) $\{ \}$ b) $\{1\}$ c) $\{ \{ \} \}$ d) $\emptyset$

9. If $U = \{1, 2, 3, 4, 5\}$, $A = \{1, 2, 3\}$ and $B = \{3, 4, 5\}$, then $U - (A \cap B)$ is;

- a) $\{1, 2, 4, 5\}$ b) $\{2, 3\}$ c) $\{1, 3, 4, 5\}$ d) $\{1, 2, 3\}$

10. The equation of a line in point-slope form is;

- a) $y = m(x + c)$ b) $y - y_1 = m(x - x_1)$ c) $y = c + mx$ d) $ax + by + c = 0$

11. A line passing through points (1, 2) and (4, 5) is;

- a) $y = x + 1$ b) $y = 2x + 3$ c) $y = 3x - 2$ d) $y = x + 2$

12. The exterior angle of regular pentagon is;

- a) 40° b) 45° c) 60° d) 72°

13. If the volume of two similar solids is 125cm^3 and 27cm^3 , the ratio of their corresponding heights is;

- a) 3:5 b) 5:3 c) 25:9 d) 9:25

14. If the sum of the measures of two angles is less than 90° , then the triangle is _____.

- a) equilateral b) acute angled c) obtuse angled d) right angled

15. A triangle can be constructed if the sum of the measure of any two sides is _____ the measure of the third side.

- a) less than b) greater than c) equal to d) greater than and equal to

Subjective Paper

QNO.2: Attempt any six questions: 6x2=12

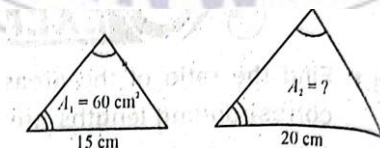
- Define monomial and binomial surd with example.
- Rationalize the denominator in $\frac{\sqrt{2}-1}{\sqrt{5}}$.
- Simplify ; $\frac{5^{n+3}-6.5^{n+1}}{9 \times 5^{n-4} \times 5^n}$
- If $x = 3 + \sqrt{8}$, then find the value of $x^2 + \frac{1}{x^2}$
- Is 0 a rational number? Explain.
- Find value of x if ; $\log x = -2.0184$
- Find value of x if ; $\left(\frac{1}{32}\right)^{2x} = 64$
- If $\log 3.177 = 0.5019$ then find $\log 0.03177$
- Find value of x if ; $\log_{10} x = -3$

QNO.3: Attempt any six questions: 6x2=12

- Write $\{x \mid x \in \mathbb{Z} \wedge 3x+1=0\}$ in set tabular form.
- What is the difference between $\{a,b\}$ and $\{\{a,b\}\}$?
- Write down power set of $\{+,-,x,\div\}$
- What are disjoint sets. Give example.
- If $U = \{1,2,3,\dots,20\}$ and $A = \{1,3,5,\dots,19\}$, verify the following; $A \cap U = A$
- Find the distance between points; $P(-8,-7), Q(0,0)$
- Find the mid-point of the points; $A(-8,3), B(2,-1)$
- Find an equation of; x-intercept: -9 and slope: -4
- Convert this equation into two intercept form; $15y - 8x + 3 = 0$

QNO.4: Attempt any six questions: 6x2=12

- If the sum of the interior angles of a polygon is 1080° , how many sides does the polygon has?
- Two similar bottles are such that one is twice as high as the other. What is the ratio of their surface areas and their capacities?
- Two right cones have volumes in the ratio 64:125. What is the ratio of their sides?
- The radii of two spheres are in the ratio 3:4. What is the ratio of their volumes?
- Find the value of unknown;



- Construct following triangle and find whether there exists any ambiguous case; $\triangle ABC$; $m\angle B = 5^\circ$, $m\angle C = 62^\circ$ and $m\angle D = 4.7^\circ$
- Define a polygon?
- Define scalene triangle.
- Define equilateral triangle.

Part-----II

Attempt any three questions; 8x3=24

5.(a)Simplify; $\frac{5.(25)^{n+1}-25.(5)^{2n}}{5.(5)^{2n+3}-(25)^{n+1}}$

(b)Simplify; $\sqrt{\frac{(216)^{2/3} \times (25)^{1/2}}{(0.04)^{-3/2}}}$

6. (a)Find out the value of x in following; (I) $\log_x 8=1$ (II) $\log_x 64=3$

(b)Find out value of x in following; (I) $\log x=0.0065$ (II) $\log x =1.192$

7. (a)If $U=\{a,b,c,d,e,f,g,h,i,j\}$, $A= \{a,b,c,d,g,h\}$ and $B=\{c,d,e,f,j\}$ then verify that; $(A \cup B)' = A' \cap B'$

(b)In a training session ,17 participants have laptops,11 have tablets,9 have laptops and tablets ,6 have laptops and books,and 4 have both tablets and books.Eight participants have all three items.The total number of participants with laptops,tablets or books is 35.How many participants have books?

8. (a)The points A(-5,-2)and B(5,-4) are ends of a diameter of a circle.Find the centre and radius of the circle.

(b)Find an equation of the line through (11,-5) and parallel to a line with slope -24.

9.(a)Three similar drinking glasses have heights 7.5cm,9cm and 10.5cm.If the tallest glass holds 343mL,find the capacities of the other two.

(b) Construcat $\triangle LMN$ of the following measurements and verify that the medians of the triangle are concurrent. $mLM=4.9cm$, $m\angle L51^\circ$ and $m\angle M =38^\circ$

	SMART SCIENCE ACADEMY MIANWALI		
	Student Name:		Class:9th
	Subject:	Math	Marks: 75
	Chapter:	Second Half Book(4,5,6,10)	Time: 2.5 hours
Date:	Crash Test Series 2025-26		

Paper Code 2025

QNO.1:Choose the correct options; (15)

2.Cubic polynomial has degree;

- a)1 b)2 c)3 d)4

3.The product of LCM and HCF = _____ of two polynomials.

- a)sum b)difference c)product d)quotient

4.The LCM of $16x^2, 4x$ and $30xy$ is;

- a) $480x^3y$ b) $240xy$ c) $240x^2y$ d) $120x^4y$

5.The HCF of a^3b^3 and ab^2 is;

- a) a^3b^3 b) ab^2 c) a^4b^5 d) a^2b

2.Solution of $5x - 10 = 10$ is;

- a)0 b)50 c)4 d)-4

3.If $7x + 4 < 6x + 6$, then x belongs to the interval

- a) $(2, \infty)$ b) $(2, \infty)$ c) $(-\infty, 2)$ d) $(-\infty, 2)$

4.A vertical line divides the plane into

- a)left half plane b)right half plane c)full plane d)two half planes

5.The equation formed from the linear inequality is called

- a)Cubic equation b)associated equation c)quadratic equation d)feasible equation

3. $\sin 60^\circ = \text{-----?}$ a)1 b) $\frac{1}{2}$ c) $\sqrt{(3)^2}$ d) $\frac{\sqrt{3}}{2}$

4.If $\sin \theta = \frac{3}{5}$ and θ is an acute angle, $\cos^2 \theta = \text{-----?}$

- a) $\frac{7}{25}$ b) $\frac{24}{25}$ c) $\frac{16}{25}$ d) $\frac{4}{25}$

5.A person standing 50m away from a building sees the top of the building at an angle of elevation of 45° . Height of the building is; a)50m b)25m c)35m d)70m

6. $\sec^2 \theta - \tan^2 \theta = \text{-----?}$ a) $\sin^2 \theta$ b)1 c) $\cos^2 \theta$ d) $\cot^2 \theta$

1. $y = -3x^3 + 7$ is _____ function.

- a)exponential b)cubic c)linear d)reciprocal

2.Reciprocal function is; a) $y = 7^x$ b) $y = \frac{2}{x}$ c) $y = 2x^2$ d) $y = 5x^3$

3.The graph of $y = x^2 - 9$ opens:

- a)upward b)downward c)left side d)right side

Subjective Paper

QNO.2: Attempt any six questions: 6x2=12

- i. Factorize ; $x^2 + 6x + 8$
- ii. Factorize ; $2y^2 - 5y + 2$
- iii. Factorize ; $x^4 - 7x^2y^2 + y^4$
- iv. Factorize ; $27 - 512y^3$
- v. Find HCF by factorization ; $t^2 - 3t - 4$, $t^2 + 5t + 4$, $t^2 - 1$
- vi. Define linear equation. Give example.
- vii. What do you mean by feasible region?
- viii. Solve and represent the solution on a real line; $2 = 7(2x + 4) + 12x$
- ix. Solve and represent the solution on a real line; $\frac{2x-1}{3} - \frac{3x}{4} = \frac{5}{6}$

QNO.3: Attempt any five questions: 6x2=12

- i. Find LCM using prime factorization; $x^4 - 16$, $x^3 - 4x$
- ii. Factorize ; $x^4 + 64$
- iii. Factorize ; $8x^3 - 125y^3 + 150xy^2 - 60x^2y$
- iv. Factorize ; $1000a^3 + 1$
- v. Solve and represent the solution on a real line; $\frac{x}{3} + 6 = -12$
- vi. Solve inequality and represent the solution of a real line; $3 + 2x \geq 3$
- vii. Solve inequality and represent the solution of a real line; $6(x+10) \leq 0$
- viii. Solve inequality and represent the solution of a real line; $\frac{1}{4}x - \frac{1}{2} \leq -1 + \frac{1}{2}x$
- ix. Shade the solution region for the following linear inequalities in xy-plane: $3x - 2y \geq 6$

QNO.4: Attempt any six questions: 6x2=12

- i. Convert $\frac{7\pi}{6}$ rad into degrees.
- ii. Find arc length if $r = 6\text{cm}$ and central angle $\Theta = \frac{\pi}{3}$ radians.
- iii. Prove that $\frac{\cos\theta}{\sin\theta} = \frac{1}{\tan\theta}$
- iv. Evaluate $\sin 60^\circ \cos 30^\circ - \cos 60^\circ \sin 30^\circ$
- v. Find value of $\operatorname{cosec} 30^\circ$ without using calculator.
- vi. Define graph.
- vii. What do you mean by a linear function?
- viii. Sketch graph for $y = -2x + 8$
- ix. Plot graph for $y = 4$

Part-----II

Attempt any three questions; 8x3=24

5.(a)Find HCF by division method; $x^3 - 9x^2 + 23x - 15$, $x^2 - 4x + 3$

(b)The HCF and LCM of two polynomials is $(x+a)$ and $12x^2(x+a)(x^2 - a^2)$.Find the product.

6. Indicate the solution region of the following linear inequalities by shading;

(a) $3x + 7y \geq 21$; $x - y \leq 2$

(b) $4x - 3y \leq 12$; $x \geq \frac{-3}{2}$

7.(a)Prove that $(\tan\theta + \cot\theta)^2 = \sec^2\theta \operatorname{cosec}^2\theta$

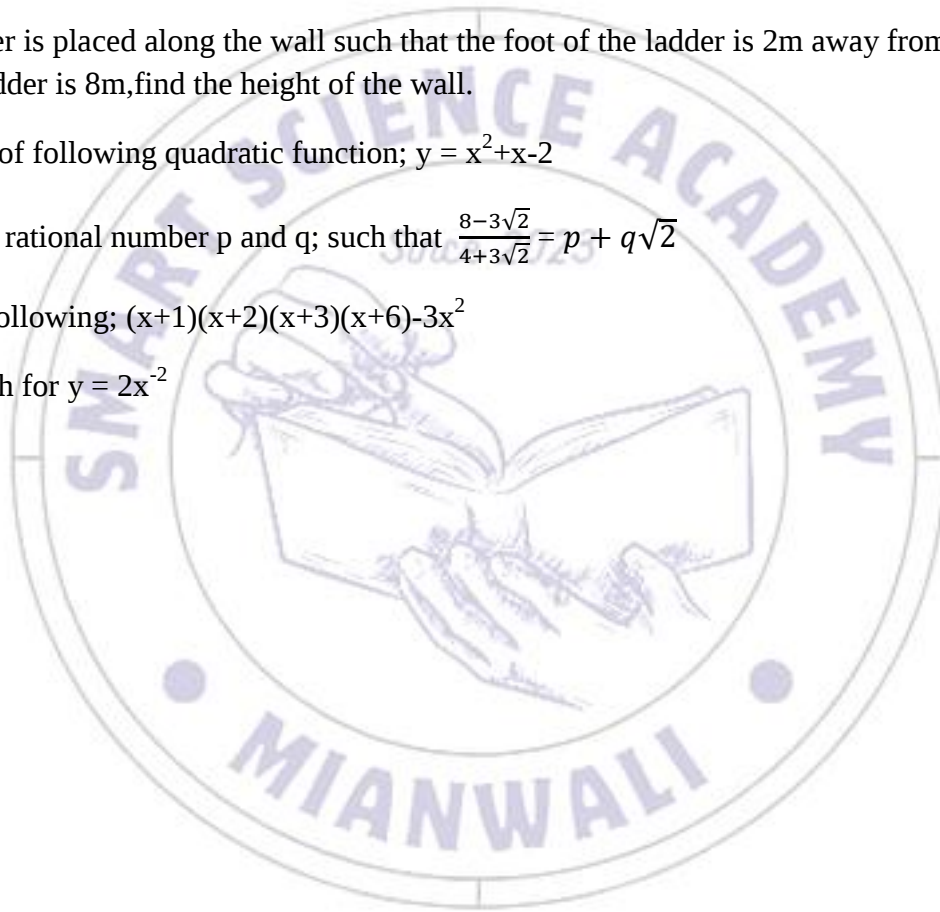
(b)If the ladder is placed along the wall such that the foot of the ladder is 2m away from the wall.If the length of the ladder is 8m,find the height of the wall.

8.(a)Plot graph of following quadratic function; $y = x^2 + x - 2$

(b) 1.Find the rational number p and q; such that $\frac{8-3\sqrt{2}}{4+3\sqrt{2}} = p + q\sqrt{2}$

9.(a)Factorize following; $(x+1)(x+2)(x+3)(x+6) - 3x^2$

(b)Plot a graph for $y = 2x^{-2}$



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	Student Name:		Class:9th
	Subject:	Math	Marks: 75
	Chapter:	Full Book(1-13)	Time: 2.5 hours
Date:	Crash Test Series 2025-26		

Paper Code 2025

QNO.1:Choose the correct options; (15)

Sr.	Questions	(A)	(B)	(C)	(D)
1.	The product of $(3+\sqrt{5})(3-\sqrt{5})$ is;	Prime number	Odd number	Irrational number	Rational number
2.	The base of common logarithm is;	2	10	5	e
3.	If $A=\{\}$, then $P(A)$ is;	$\{\}$	$\{1\}$	$\{\{\}\}$	$\emptyset$
4.	If $n(A \cup B)=50$, $n(A)=30$ and $n(B)=35$, the $n(A \cap B)=$	23	15	9	40
5.	The LCM of $16x^2$, $4x$ and $30xy$ is;	$480x^3y$	$400xy$	$240x^2y$	$120x^4y$
6.	The factorization of $12x+36$ is:	$12(x+3)$	$12(3x)$	$13(3x+1)$	$x(12+36x)$
7.	Solution of $5x-10=10$ is;	0	50	4	-4
8.	$\sin 60^\circ =$	1	$\frac{1}{2}$	$\sqrt{(3)^2}$	$\frac{\sqrt{3}}{2}$
9.	$\sec^2 \theta - \tan^2 \theta =$ -----	$\sin^2 \theta$	1	$\cos^2 \theta$	$\cot^2 \theta$
10.	Distance between two points $P(1,2)$ and $Q(4,6)$ is:	5	6	$\sqrt{13}$	4
11.	If the volume of two similar solids is 125cm^3 and 27cm^3 , the ratio of their corresponding heights is;	3:5	5:3	25:9	9:25
12.	Slope of the line $y=5x+3$ is;	3	-3	5	-5
13.	An equilateral triangle can be -----	isosceles	Right angled	Obtuse angled	Each angle 50°
14.	Which data takes only some specific values?	Continuous data	Discrete data	Grouped data	Ungrouped data
15.	Which rolling a pair of dice, what will be the probability of double 2?	$\frac{1}{6}$	$\frac{1}{3}$	$\frac{5}{6}$	$\frac{1}{36}$

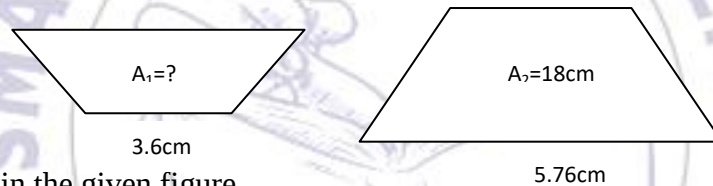
Subjective Paper
Subjective Type(Part I)

QNO.2: Attempt any six questions: 6x2=12

- i. Find two rational numbers between 2 and 3.
- ii. Simplify; $\left(\frac{3}{4}\right)^{-2} \div \left(\frac{4}{9}\right)^3 \times \frac{16}{27}$
- iii. Find the value of x in $\log_{10} x = -3$
- iv. Find characteristic of 0.000049
- v. Write down the power set of $\{+, -, \times, \div\}$
- vi. Define difference of two sets.
- vii. Factorize $x^2 + x - 12$
- viii. Factorize $125a^3 - 1$
- ix. Solve $12x + 30 = -6$ and represent the solution on a real line.

QNO.3: Attempt any five questions: 6x2=12

- i. Convert 315° to radians.
- ii. Find the arc length if $r = 6\text{cm}$ and central angle $\Theta = \frac{\pi}{3}$ radians.
- iii. Evaluate $2\cos\frac{\pi}{6} \sin\frac{\pi}{6}$
- iv. Find the distance between the points L(0,3) and M(-2,-4).
- v. Find the slope of the line joining the points (3,-2) and (2,7).
- vi. Find the equation of the horizontal line through (7,-9)



- vii. Find the unknown in the given figure.
- viii. The radii of two spheres are in the ratio of 3:4. What is the ratio of their volumes?
- ix. The mass of sack of rice is 50Kg and height 60cm. Find the mass of the similar sack of rice with height of 90cm.

QNO.4: Attempt any six questions: 6x2=12

- i. Sketch the graph of $y = 2x - 1$.
- ii. Plot the graph of the function $y = 5^{-x}$
- iii. Construct a triangle BCD in which measures of two sides are 5.5cm and 4.2cm and measure of their included angle is 60° .
- iv. Define orthocenter?
- v. Define Arithmetic mean(AM)
- vi. The marks in mathematics of Jamal in eight monthly tests were 75,76,80,80,82,82,85. Find the mode of the marks.
- vii. Following are the heights (55,53,54,58,60,61,62,56,57,52,51,63) in (inches) of 12 students. Find the median height.
- viii. Abdul Raheem rolls a fair dice, what is the probability of getting the number divisible by 3?
- ix. Define sample space?

Subjective Type(Part II)

Attempt any two questions; 8x2=16

Q.5(a)Simplify the following $\frac{(25)^{\frac{3}{2}} \times 243^{\frac{3}{5}}}{(16)^{\frac{5}{4}} \times (8)^{\frac{4}{3}}}$

(b)Find the value of x if; $\log x = -2.0184$

Q.6(a)There are 98 secondary school students in a sports club,58 students join the swimming club,and 50 join the tug-of-war club.How many students participated in both games?

(b)Factorize; $x^4 - 30x^2y^2 + 9y^4$

Q.7(a)Indicate the solution region of the following linear inequalities by shading;

$$2x - 3y \leq 6 ; 2x + 3y \leq 12$$

(b)Prove that $(\tan\theta + \cot\theta)^2 = \sec^2\theta \operatorname{cosec}^2\theta$.

Subjective Type(Part III)

Attempt any one questions; 8x1=8

Q.8(a)Show that the points A(0,2),B($\sqrt{3}$,1) and C(0,-2) are vertices of a right triangle.

(b)Find the unknown value in the following;



Q.9(a)A set of data contains the values as 148,145,160,157,156,160. Show that Mode >Median >Mean

(b)The frequency of defective products in 750 samples are shown in the following table.Find the relative frequency for the given table.

No. of defectives per sample	0	1	2	3	4	5	6	7	8
No. of sample	120	140	94	85	105	50	40	66	50