

Name of the School: _____

SUMMATIVE ASSESSMENT – I (2026–27)

Class X — MATHEMATICS

English Medium

Model Question Paper — Set A

Time: 3 Hours

Max. Marks: 80

Name of the Student: _____ Roll No.: _____

Syllabus covered: Ch. 1 Real Numbers, Ch. 2 Sets, Ch. 3 Polynomials, Ch. 4 Pair of Linear Equations in Two Variables, Ch. 5 Quadratic Equations, Ch. 6 Progressions, Ch. 7 Coordinate Geometry

Instructions:

1. Part A (60 marks) is to be answered in the answer booklet within the first 2 hours 30 minutes.
2. Section I: Q.1–6 are very short answer questions. Answer all. Each carries 2 marks.
3. Section II: Q.7–12 are short answer questions. Answer all. Each carries 4 marks.
4. Section III: Q.13–16 are essay type questions with internal choice. Answer one from each question. Each carries 6 marks.
5. Part B (20 marks) is to be answered on the question paper itself in the last 30 minutes.
6. Use of calculators is not allowed. Graph sheets will be supplied where required.

PART – A

Time: 2 Hours 30 Minutes

Marks: 60

SECTION – I

Note: Answer ALL the questions. Each question carries 2 marks. ($6 \times 2 = 12$)

1. Express 3825 as a product of its prime factors.
2. If $A = \{1, 2, 3, 4, 5\}$ and $B = \{2, 4, 6, 8\}$, find $A \cup B$ and $A \cap B$.
3. Find the zeroes of the polynomial $p(x) = x^2 - 5x + 6$.
4. Check whether the pair of equations $2x + 3y = 7$ and $4x + 6y = 14$ is consistent. Give reason.
5. Find the 10th term of the A.P. 2, 7, 12, ...
6. Find the distance between the points (2, 3) and (6, 6).

SECTION – II

Note: Answer ALL the questions. Each question carries 4 marks. ($6 \times 4 = 24$)

7. Prove that $5 - \sqrt{3}$ is irrational.
8. Let $A = \{x : x \text{ is a factor of } 12\}$ and $B = \{x : x \text{ is a factor of } 18\}$. Find $A - B$, $B - A$ and $A \cap B$. Represent A and B in a Venn diagram.
9. Divide $3x^3 + x^2 + 2x + 5$ by $x^2 + 2x + 1$ and verify the division algorithm.
10. 5 pencils and 7 pens together cost ₹50, whereas 7 pencils and 5 pens together cost ₹46. Find the cost of one pencil and one pen.
11. Find the roots of $2x^2 - 7x + 3 = 0$ using the quadratic formula.
12. Find the ratio in which the point $(-1, 6)$ divides the line segment joining the points $(-3, 10)$ and $(6, -8)$.

SECTION – III

Note: Answer ONE question (a or b) from each of Q.13 to 16. Each question carries 6 marks. ($4 \times 6 = 24$)

13. (a) Draw the graph of $p(x) = x^2 - 3x - 4$ and find its zeroes from the graph. Verify the zeroes algebraically.

OR

- (b) Solve the following pair of equations graphically: $x + 3y = 6$ and $2x - 3y = 12$.

14. (a) A rectangular park is to be designed whose breadth is 3 m less than its length. Its area is to be 4 sq. m more than the area of a triangular park whose base is equal to the breadth of the rectangular park and altitude is 12 m. Find the length and breadth of the rectangular park.

OR

- (b) The sum of the reciprocals of Rehman's ages (in years) 3 years ago and 5 years from now is $\frac{1}{3}$. Find his present age.
15. (a) How many terms of the A.P. 24, 21, 18, ... must be taken so that their sum is 78? Explain why there are two answers.

OR

- (b) In a G.P., the 3rd term is 24 and the 6th term is 192. Find the 10th term.
16. (a) Find the area of the triangle formed by the vertices (1, -1), (-4, 6) and (-3, -5).

OR

- (b) Show that the points (1, 7), (4, 2), (-1, -1) and (-4, 4) are the vertices of a square.

PART – B

Time: 30 Minutes

Marks: 20

I. Multiple Choice Questions*Choose the correct answer and write its letter in the bracket. ($10 \times 1 = 10$)*

1. The HCF of 12 and 18 is []
(A) 3 (B) 6 (C) 36 (D) 12
2. $\log_2 32 =$ []
(A) 4 (B) 5 (C) 6 (D) 16
3. Which of the following has a terminating decimal expansion? []
(A) $13/3125$ (B) $17/6$ (C) $64/455$ (D) $29/343$
4. If $A \subset B$, then $A \cup B =$ []
(A) A (B) B (C) ϕ (D) $A \cap B$
5. The graph of $y = p(x)$ cuts the x-axis at 3 points. The number of zeroes of $p(x)$ is []
(A) 1 (B) 2 (C) 3 (D) 0
6. The pair of equations $x = 2$ and $y = 3$ has []
(A) no solution (B) a unique solution
(C) infinitely many solutions (D) two solutions
7. The discriminant of $x^2 - 4x + 4 = 0$ is []
(A) 0 (B) 4 (C) 8 (D) -4
8. The common difference of the A.P. 3, 1, -1, -3, ... is []
(A) 2 (B) -2 (C) 1 (D) -1
9. The distance of the point (3, 4) from the origin is []
(A) 3 (B) 4 (C) 5 (D) 7
10. The midpoint of the line segment joining (2, 4) and (6, 8) is []
(A) (4, 6) (B) (8, 12) (C) (2, 2) (D) (3, 4)

II. Fill in the Blanks*($5 \times 1 = 5$)*

11. The LCM of 6 and 20 is _____.
12. If $n(A) = 5$, $n(B) = 4$ and $n(A \cap B) = 2$, then $n(A \cup B) =$ _____.
13. The sum of the zeroes of $2x^2 - 8x + 5$ is _____.
14. The n th term of the G.P. 2, 6, 18, ... is _____.
15. The slope of the line joining (1, 2) and (3, 6) is _____.

III. Match the Following*Write the correct letter from Group B in the bracket. ($5 \times 1 = 5$)*

No.	Group A		Group B
16.	Symbol of the empty set ()	A.	$n(n + 1)/2$
17.	Degree of a quadratic polynomial ()	B.	0
18.	Sum of the first n natural numbers ()	C.	ϕ
19.	Centroid of a triangle ()	D.	$((x_1+x_2+x_3)/3, (y_1+y_2+y_3)/3)$
20.	Value of $\log 1$ (any base) ()	E.	2
		F.	1

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