

Name of the School: _____

SUMMATIVE ASSESSMENT – I (2026–27)

Class VIII — MATHEMATICS

English Medium

Model Question Paper — Set B

Time: 2 Hours 45 Minutes

Max. Marks: 80

Name of the Student: _____ Roll No.: _____

Syllabus covered: Ch. 1 Rational Numbers, Ch. 2 Linear Equations in One Variable, Ch. 3 Construction of Quadrilaterals, Ch. 4 Exponents and Powers, Ch. 5 Comparing Quantities using Proportion, Ch. 6 Square Roots and Cube Roots, Ch. 7 Frequency Distribution Tables and Graphs, Ch. 8 Exploring Geometrical Figures, Ch. 9 Area of Plane Figures

Instructions:

1. Part A (60 marks) is to be answered in the answer booklet within the first 2 hours 15 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. Keep your geometry box and graph sheets ready.

PART – A

Time: 2 Hours 15 Minutes

Marks: 60

SECTION – I

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

1. Find $(-2/3) + (5/6)$.
2. Solve: $x/3 + 2 = 5$.
3. Simplify: $(-3)^4 \times (5/3)^4$.
4. Find the value of $(2^{-1} + 3^{-1})^{-1}$.
5. Is 243 a perfect square? Is 216 a perfect cube? Give reasons.
6. Find the area of a rhombus whose diagonals are 12 cm and 8 cm.

SECTION – II

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

7. Verify that $a \times (b + c) = (a \times b) + (a \times c)$ for $a = -2/3$, $b = 1/2$ and $c = -1/4$.
8. The perimeter of a rectangle is 40 m. Its length is 4 m more than its breadth. Find the length and breadth of the rectangle.
9. Simplify and write in exponential form: $(25 \times t^4) \div (5^{-3} \times 10 \times t^8)$.
10. A TV marked at ₹20,000 is sold at a discount of 12%. Find the selling price. If the shopkeeper still gains 10%, find his cost price.
11. Find the smallest number by which 1323 must be divided so that the quotient is a perfect cube. Also find the cube root of the quotient.
12. The weights (in kg) of 20 students are given below. Prepare a frequency distribution table using the class intervals 30–35, 35–40, 40–45 and 45–50. Data: 31, 42, 36, 38, 44, 33, 40, 47, 35, 39, 41, 34, 46, 37, 43, 32, 48, 36, 45, 39

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) Construct a quadrilateral PQRS in which $PQ = 4$ cm, $QR = 6$ cm, $RS = 5$ cm, $PS = 5.5$ cm and $PR = 7$ cm.

OR

(b) Construct a rhombus whose diagonals are 6 cm and 8 cm.

14. (a) Draw a histogram and a frequency polygon for the following data of daily expenditure of families.

Daily expenditure (₹)	0–100	100–200	200–300	300–400	400–500
Number of families	5	10	15	8	2

OR

(b) Solve: $(3x + 1)/16 = (2x - 3)/7$. Also, the denominator of a fraction is 8 more than its numerator. If the numerator is increased by 17 and the denominator is decreased by 1, the fraction becomes $3/2$. Find the fraction.

15. (a) Find the square roots of 8281 and 5.29 by the long division method. Also find the least number that must be subtracted from 5607 to make it a perfect square.

OR

(b) The population of a town is 20,000. It increases at the rate of 5% every year. Find the population after 2 years.

16. (a) A field is in the shape of a trapezium whose parallel sides are 48 m and 32 m, and the distance between them is 20 m. Find its area. Also find the area of a quarter circle (sector with angle 90°) of radius 7 cm. (Take $\pi = 22/7$)

OR

(b) What are congruent figures and similar figures? Give two examples of each. Draw one figure that has only one line of symmetry and another that has rotational symmetry of order 2.

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 additive identity for rational numbers is []
(A) 0 (B) 1 (C) -1 (D) $\frac{1}{2}$
2. Which of the following is NOT a rational number? []
(A) $\frac{2}{3}$ (B) -5 (C) 0 (D) $\sqrt{2}$
3. If $3x = x + 8$, then $x =$ []
(A) 2 (B) 4 (C) 8 (D) 3
4. $(-1)^{101} =$ []
(A) 1 (B) -1 (C) 101 (D) -101
5. $3^{-3} =$ []
(A) -9 (B) -27 (C) $\frac{1}{27}$ (D) $\frac{1}{9}$
6. Discount is always calculated on the []
(A) cost price (B) selling price (C) marked price (D) profit
7. How many perfect squares are there from 1 to 50? []
(A) 5 (B) 6 (C) 7 (D) 8
8. The cube of 0.3 is []
(A) 0.9 (B) 0.09 (C) 0.027 (D) 0.27
9. The middle value of data arranged in order is called the []
(A) mean (B) median (C) mode (D) range
10. A figure having rotational symmetry of order 4 is a []
(A) rectangle (B) square (C) kite (D) parallelogram

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

11. The reciprocal of 1 is _____.
12. $4^{-2} =$ _____.
13. $\sqrt{0.09} =$ _____.
14. The number of times an observation occurs in the data is called its _____.
15. The area of a circle of radius r 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.	Additive inverse of $\frac{2}{5}$ ()	A.	$-\frac{2}{5}$
17.	Standard form of 0.00012 ()	B.	1.2×10^{-4}
18.	Cube root of 64 ()	C.	4
19.	Area of a trapezium ()	D.	$\frac{1}{2} h(a + b)$
20.	Lines of symmetry of an equilateral triangle ()	E.	3
		F.	8

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