

**Half-Yearly Examination - (2026-27)**  
**SUBJECT – MATHEMATICS (SET - 1)**

TIME – 2½ Hours

Class- VII

M.M – 60

*General Instructions: All questions are compulsory. Total 29 questions in 4 Sections (A, B, C, D).*

**SECTION – A (1 x 12 = 12M)**

Q1. The difference between the greatest 5-digit number and smallest 5-digit number is:

- (A) 99,999 (B) 89,999 (C) 90,000 (D) 1,00,000

Q2. Estimated value of  $589 \times 312$  using general rule is:

- (A) 1,80,000 (B) 2,00,000 (C) 1,50,000 (D) 2,40,000

Q3. The value of  $15 - [5 - \{2 + (3 - 1)\}]$  is:

- (A) 10 (B) 12 (C) 8 (D) 14

Q4. 5 kg 5 g written in decimal notation as kilograms is:

- (A) 5.5 kg (B) 5.005 kg (C) 5.05 kg (D) 50.05 kg

Q5. If the side of an equilateral triangle is 'a', its perimeter expression is:

- (A)  $a + 3$  (B)  $3a$  (C)  $a^3$  (D)  $3 + a$

Q6. Lines which lie in the same plane and do not intersect however far produced are:

- (A) Intersecting lines (B) Parallel lines (C) Concurrent lines (D) Perpendicular lines

Q7. If two supplementary angles are in the ratio 2 : 3, the smaller angle is:

- (A)  $72^\circ$  (B)  $108^\circ$  (C)  $36^\circ$  (D)  $54^\circ$

Q8. Exterior angle of a triangle is equal to:

- (A) Sum of all interior angles (B) Sum of interior opposite angles (C) Difference of interior angles (D) None of these

Q9. Which of the following numbers is a prime number?

- (A) 91 (B) 87 (C) 97 (D) 93

Q10. Vertically opposite angles are always:

- (A) Complementary (B) Supplementary (C) Equal (D) Unequal

Q11. Assertion(A): Division of a whole number by a fraction is the whole number multiplied by the reciprocal of that fraction.

Reason(R): Reciprocal of a fraction is obtained by interchanging its numerator and denominator.

- (A) Both A and R are true and R is the correct explanation of A.  
(B) Both A and R are true but R is not the correct explanation of A.

- (C) Assertion A is true but Reason R is false.  
(D) Assertion A is false but Reason R is true.

Q12. Assertion: In a right-angled triangle, the acute angles add up to  $90^\circ$ .

Reason: The sum of all angles in a triangle is  $180^\circ$ .

- (A) Both A and R are true and R is the correct explanation of A.  
(B) Both A and R are true but R is not the correct explanation of A.  
(C) Assertion A is true but Reason R is false.  
(D) Assertion A is false but Reason R is true.

**SECTION – B (2 x 7 = 14M)**

Q13. Convert: (i) 45 mm into metres (ii) 8 litres 25 millilitres into litres.

Q14. Evaluate using properties of operations:  $168 \times 99 + 168$ .

Q15. Solve for x: (i)  $x + 19 = 35$  (ii)  $7x = 56$

Q16. Arrange the following decimals in descending order: 14.2, 14.02, 14.202, 14.002, 14.22

Q17. Find the value of angle x if two adjacent angles forming a linear pair are in the ratio 4 : 5.

Q18. One of the acute angles of a right-angled triangle is  $42^\circ$ . Find the other acute angle.

Q19. Write algebraic expressions for:

- (i) Product of numbers a and b subtracted from 20  
(ii) Five times y added to the quotient of z by 3.

**SECTION – C (3 x 6 = 18M)**

Q20. Simplify the expression and find its value for  $x = 2$ :  $3(x^2 + 5) - 2(x - 4) + 7$

Q21. (i) Convert  $\frac{3}{5}$  into decimal form. (ii) Write the expanded form of 405.082 using fractions.

Q22. A water tank contains 50,000 litres of water. 12,450 litres is used on Monday and 18,200 litres on Tuesday. How much water is left in the tank on Wednesday?

Q23. Write the standard numeral for: Seven crore twenty-five lakh six thousand four hundred nine.

Q24. Verify if the lengths 5 cm, 12 cm, and 13 cm can form a right-angled triangle using the property of sides.

Q25. Draw a line segment AB of length 7.2 cm. Construct its perpendicular bisector using a ruler and compass and write steps.

**SECTION – D (4 x 4 = 16M)**

Q26. A school purchases stationery items:

- 120 notebooks at ₹25.50 each

• 80 pens at ₹12.75 each

(i) Calculate the cost of notebooks.

(ii) Calculate the cost of pens.

(iii) If the total bill is subjected to a 5% tax, what is the final payable amount?

Q27. Observe the matchstick pattern for regular octagons ( $\square$ ):

1 octagon = 8 matchsticks, 2 octagons = 15 matchsticks, 3 octagons = 22 matchsticks.

(i) How many matchsticks are needed for 10 octagons?

(ii) Find the general formula for 'n' octagons.

Q28. In the given geometric arrangement, two parallel lines are cut by a transversal. If interior angles on the same side of the transversal are given as  $(4x)^\circ$  and  $(5x)^\circ$  respectively, find the value of x and both angles.

Q29. A gardener has a plot of land. He uses  $\frac{2}{5}$  of it for growing roses,  $\frac{1}{4}$  for sunflowers,  $\frac{1}{10}$  for marigolds, and the remaining area for green grass.

(i) What fraction of land is used for roses and sunflowers combined?

(ii) What fraction of land is used for green grass?

(iii) If the total land area is 2000 sq.m, find the area (in sq.m) used for marigolds.