Student ID | | | | | | | | | | |

Directorate of Education, GNCT of Delhi
Practice Paper (Mid-Term)
Session: 2026-27
CLASS – VIII
SUBJECT – MATHEMATICS

Time Allowed: $2\frac{1}{2}$ hours **Maximum Marks: 60**

GENERAL INSTRUCTIONS:

Read the following instructions carefully and follow them:

(i) This question paper contains **16** questions. **All** questions are compulsory.
(ii) Question paper is divided into **FIVE** sections – **Section 'A', 'B', 'C', 'D'** and '**E**'.
(iii) In **section 'A'** question number **1** have **12** multiple choice subparts carrying **1** mark each.
(iv) In **section 'B'** question number **2** to **7** are Objective type questions carrying **2** marks each.
(v) In **section 'C'** question number **8** to **10** are Short Answer (SA) type questions carrying **3** marks each.
(vi) In **section 'D'** question number **11** to **13** are Long Answer (LA) type questions carrying **5** marks each.
(vii) In **section 'E'** question number **14** to **16** are **source based/case-based** questions, whose sub-parts are of **1, 1** and **2** marks respectively.
(viii) There is no overall choice. However, internal choice has been provided in 1 question of section **'B'**, 1 question of section **'C'**, 2 questions of section **'D'**, and in each subpart of source based/case-based question carrying 2 marks in section **'E'**. You have to attempt only one of the alternatives in all such questions.
(ix) Draw neat figures wherever required.
(x) Use of calculators is **NOT allowed.**

SECTION – A

Question 1 consists of Multiple-Choice questions (i-xii) of 1 mark each.
Choose the appropriate option from the given options: 12×1= 12

1.(i) The product of smallest three digit perfect square number with greatest one digit perfect cube number is: 1

(A) 800 (B) 900

(C) 1000 (D) 1100

(ii) The standard form of 34,30,000 is: 1

(A) 34.3×10^{-5} (B) 3.43×10^{-6}

(C) 34.3×10^{5} (D) 3.43×10^{6}

(iii) Which Roman numeral is incorrect? 1

(A) XL (B) IC

(C) IX (D) XC

(iv) CCXX = ? 1

(A) 110 (B) 330

(C) 220 (D) 440

(v) Following numeral (in Egyptian system) represent the number:

1

(A) 176 (B) 276

(C) 376 (D) 476

(vi) Which of the following statements is always true?

(A) Every rectangle is a square.

(B) Every rhombus is a square.

(C) Every square is a rectangle.

(D) Every parallelogram is a rhombus. 1

(vii) To check if a number is divisible by 24, we should check its divisibility by: 1

(a) 4 and 6 (b) 2 and 12

(c) 3 and 8 (d) 10 and 14

(viii) The value of $99^2 - 1^2$ is:

(a) 98 (b) 9800 1

(c) 100 (d) 9801

(ix) Expanded form of $(6x + 1)^2$ is:

(a) $36x^2 + 12x + 1$ (b) $6x^2 + 12x + 1$ 1

(c) $36x^2 - 12x + 1$ (d) $6x^2 - 12x + 1$

(x) The value of $(u + v)^2 - (u - v)^2$ is:

(a) $u^2 + v^2$ (b) $4uv$ 1

(c) 0 (d) $2(u^2 + v^2)$

(xi) Which of the following are in proportion? 1

(a) 7 : 12 :: 12 : 7 (b) 24 : 8 :: 9 : 4

(c) 12 : 18 :: 28 : 12 (d) 4 : 7 :: 12 : 21

(xii) Temperature conversion formula between Fahrenheit and Celsius is given by: 1

(a) $F = \frac{9}{5} \times C - 32$ (b) $F = \frac{5}{9} \times C + 32$

(c) $F = \frac{9}{5} \times C + 32$ (d) $F = \frac{5}{9} \times C - 32$

SECTION – B

Question 2 to 7 is Objective type questions of 2 marks each. 6×2=12

2 Find the cube root of 10684. 2

3 Write 561.093 in expanded form. 2

4 Find the remaining angles of an isosceles trapezium if one of its base angles is 100°. 2

5 Find four consecutive natural numbers whose sum is 34. 2

OR

If 31z5 is a multiple of 9, where z is a digit, what is the value of z?

6 Neerja is a 1-year-old girl. Her elder brother is 5 years old. What will be Neerja's age when the ratio of her age to her brother's age is 1 : 2? 2

7 Write any two ratios that are proportional to 4 : 9. 2

SECTION – C

Question 8 to 10 is Short Answer type questions of 3 marks each. 3×3 = 9

8 Add the following numbers without converting them to Hindu numerals: 3

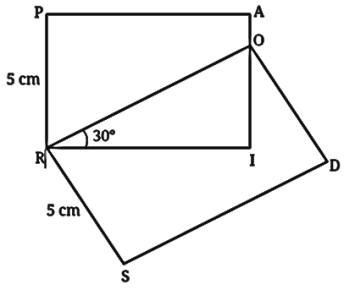
(i) CCXXXII + CCCCXIII

(ii) LXXXVII + LXXVIII

9 In a rhombus ABCD, one angle is 50°. Calculate all the other interior angles of the rhombus. Also state the property used. 3

OR

If PAIR and RODS are two rectangles, find ∠IOD.



Expand the following: 3

10 (i) $(p + pq - 3q^2)(4 + q)$

(ii) $(5 + z)(y + 9)$

SECTION – D

Question 11 to 13 is Long Answer type questions of 5 marks each. 3×5=15

(i) Find the smallest number by which 9408 must be multiplied so that 5

11 the product is a perfect square. Also find the square root of the product.

(ii) Find the length of the side of a square whose area is 441 m^2.

If $15^2 = 225$, then find the values of the following: 5

12 (i) $(1.5)^2$

(ii) $(0.15)^2$

(iii) $(0.015)^2$

(iv) $(150)^2$

(v) $(1500)^2$

OR

Simplify and write these in exponential form:

(i) $10^{-2} \times 10^{-5}$

(ii) $5^7 \div 5^4$

(iii) $9^{-7} \div 9^4$

(iv) $(13^{-2})^{-3}$

(v) $m^5 n^{12} (mn)^9$

Solve the following cryptarithms: 5

13 (i) $\text{UT} \times 3 = \text{PUT}$

(ii) $\text{PP} \times \text{QQ} = \text{PRP}$

(iii) $\text{L2N} \times 2 = 2\text{NP}$

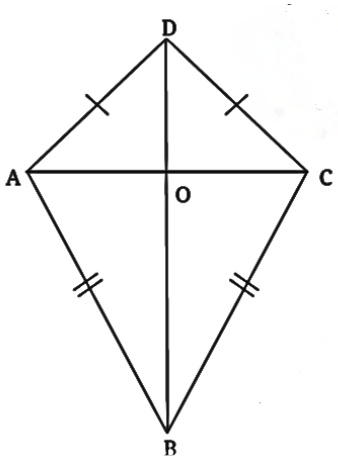
(iv) $\text{EF} \times \text{F} = \text{GGG}$

(v) $\text{WOW} \times 5 = \text{MEOW}$

SECTION – E

Question 14 to 16 is Source-based/ Case Study questions of 4 marks each. 3×4=12

14 Riya and Aarav are making a decorative kite for the school exhibition. The kite is in the shape of a quadrilateral having two pairs of adjacent equal sides. Also they observe that the diagonals intersect at right angles.



Based on the above information, answer the following:

(i) If AD = 5 cm, then find the length of CD. 1

(ii) (a) Show that diagonal BD bisects ∠ABC and ∠ADC. 2

OR

(ii) (b) Show that the diagonal BD bisects diagonal AC. 1

(iii) Find the measure of ∠DOC.

15 Manish and Tushar are good friends who decide to prepare for Mental Math Quiz Competition. To make their calculations fast and accurate they decided to take help from their Mathematics Teacher, Mr. Naveen. Mr. Naveen taught them the following identities:

(A) $(a+b)^2 = a^2 + 2ab + b^2$

(B) $(a-b)^2 = a^2 - 2ab + b^2$

(C) $a^2 - b^2 = (a+b)(a-b)$

Based on the above information, answer the following:

(i) Find the value of $(65)^2$ using identity (A). 1

(ii) Find the value of 98×102 using identity (C). 1

(iii) (a) Prove that: $(m+n)^2 - (n-m)^2 = 4mn$ 2

OR

(iii) (b) Using the identity $a^2 = (a+b)(a-b) + b^2$, find the value of 197^2.

16 Prashanti, Bhuvan and Rohan have started a food cart business near their school. Prashanti invested ₹75,000, Bhuvan invested ₹50,000 and Rohan invested ₹25,000. At the end of the first year, they made a profit of ₹40,000.

Based on the above information, answer the following:

(i) Find the ratio of their investments. 1

(ii) Find Bhuvan's share of profit. 1

(iii) (a) Find the difference between the Prashanti's share of profit and Rohan's share of profit. 2

OR

(iii) (b) Find the missing numbers so that these ratios are proportional to 18 : 24.

3 : ___?___ 20 : ___?___