

Practice Paper (Mid-Term) — Set 1

(Based on Ganita Prakash – Part I)

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 $\frac{\text{based}}{\text{case}}$ -based questions, whose subparts 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 $\frac{\text{based}}{\text{case}}$ -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:

$12 \times 1 = 12$

1.(i) Which of the following Roman numeral additions is INCORRECT? **[1]**

(a) $XC + X = C$	(b) $XL + X = LI$
(c) $L + L = C$	(d) $D + D = M$

(ii) $(3x - 2)^2$ expands to: **[1]**

(a) $9x^2 - 12x + 4$	(b) $3x^2 - 12x + 4$
(c) $9x^2 - 6x + 4$	(d) $9x^2 + 12x + 4$

(iii) The smallest two-digit perfect cube is: **[1]**

(a) 16	(b) 25
(c) 27	(d) 32

(iv) In a rectangle, the diagonals are: **[1]**

(a) equal and bisect each other	(b) perpendicular to each other
(c) unequal in length	(d) never equal

(v) Which pair of ratios is in proportion? [1]

(a) $3 : 5 :: 15 : 20$	(b) $4 : 6 :: 10 : 15$
(c) $7 : 9 :: 14 : 16$	(d) $5 : 8 :: 15 : 20$

(vi) The value of $2^{-3} \times 2^5$ is: [1]

(a) 2	(b) 4
(c) 8	(d) 16

(vii) The digital root of 49382 is: [1]

(a) 6	(b) 7
(c) 8	(d) 9

(viii) In the Egyptian numeral system ($\mathbf{9} = 100$, $\cap = 10$, $| = 1$), the numeral $\mathbf{9}\cap\cap\cap\cap||$ represents: [1]

(a) 124	(b) 142
(c) 214	(d) 241

(ix) Using a suitable identity, the value of 52×48 is: [1]

(a) 2496	(b) 2500
(c) 2404	(d) 2596

(x) The sum of the interior angles of any quadrilateral is always: [1]

(a) 180°	(b) 270°
(c) 360°	(d) it depends on the shape

(xi) The cube root of -216 is: [1]

(a) 6	(b) -6
(c) 36	(d) -36

(xii) If x varies directly as y , and $x = 15$ when $y = 5$, find x when $y = 8$. [1]

(a) 20	(b) 22
(c) 24	(d) 26

SECTION-B

Question 2 to 7 is Objective type questions of 2 marks each

$6 \times 2 = 12$

2. Find the smallest number by which 2028 must be multiplied so that the product is a perfect square. [2]
3. Simplify: $(5^{-2} \times 5^4) \div 5$ [2]
4. Find the missing angle of a quadrilateral if three of its angles are 75° , 95° , and 110° . [2]
5. (a) Find three consecutive odd numbers whose sum is 81.

OR

- (b) Write LXXXIV in Hindu-Arabic numerals, and state whether it is even or odd. [2]
6. A photocopy machine can copy 150 pages in 5 minutes. How many pages can it copy in 12 minutes at the same rate? [2]
7. Find the value of $(a + 7)(a - 7)$ using a suitable identity, when $a = 13$. [2]

SECTION-C

Question 8 to 10 is Short Answer type questions of 3 marks each

$3 \times 3 = 9$

8. Add the following Roman numerals without converting them to Hindu-Arabic numerals:

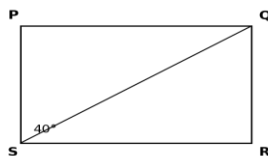
- (i) XLII + XXVIII
- (ii) LVI + XXXIV

[3]

9. (a) In rhombus ABCD, one angle is 64° . Find the other three interior angles, stating the property used.

OR

- (b) In the figure, PQRS is a rectangle with diagonal SQ drawn. If $\angle PSQ = 40^\circ$, find $\angle SQR$ and $\angle QSR$, stating the properties used.



[3]

10. Expand the following:

- (i) $(2p - 3q)(4p + q)$
(ii) $(x + 5)(x - 5)(x^2 + 25)$

[3]

SECTION-D

Question 11 to 13 is Long Answer type questions of 5 marks each

$3 \times 5 = 15$

11. (i) Find the smallest number by which 3840 must be divided so that the quotient is a perfect cube. Also find the cube root of the quotient.

- (ii) Find the length of the side of a cube whose volume is 2744 cm^3 .

[5]

12. (i) If $3^x = 81$, find the value of 3^{x+2} .

- (ii) Simplify and express as a single power: $(7^2)^3 \div 7^4$

[5]

OR

- (i) Simplify: $10^{-3} \times 10^5$
(ii) Simplify: $(2^{-1})^{-3} \times 2^{-1}$
(iii) Simplify: $(a^{-2}b^3)^2$

[5]

13. Solve the following puzzles:

- (i) $AB \times 3 = CAB$ (find A, B, C)
(ii) $PP \times QQ = PRP$ (find P, Q, R)
(iii) $5a6b$ is divisible by 18. List all possible values of the digits a and b.
(iv) $24a7b$ is divisible by 11. List all possible values of the digits a and b.
(v) $WOW \times 5 = MEOW$ (find W, O, M, E)

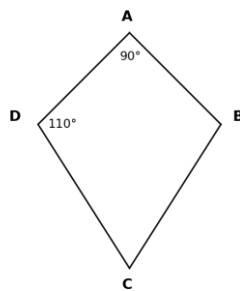
[5]

SECTION-E

Question 14 to 16 is Source-based/ Case Study questions of 4 marks each

$3 \times 4 = 12$

14. A kite ABCD has two pairs of adjacent equal sides ($AB = AD$ and $CB = CD$), with diagonals AC and BD intersecting at right angles at point O.



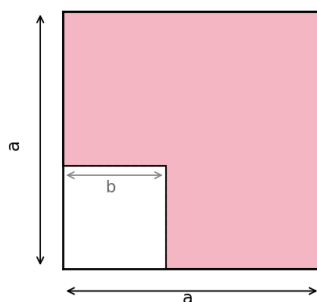
Based on the above information, answer the following:

- (i) If $AB = 6$ cm, find AD . [1 Mark]
- (ii) (a) Show that diagonal AC bisects $\angle BAD$ and $\angle BCD$. [2 Marks]

OR

- (ii) (b) Show that diagonal AC bisects diagonal BD . [2 Marks]
- (iii) If $\angle ABC = 100^\circ$, find $\angle ADC$, stating the property used. [1 Mark]

15. The figure below shows a large square of side a with a smaller square of side b removed from one corner, leaving an L-shaped shaded region.



Based on the above information, answer the following:

- (i) Find the area of the large square in terms of a . [1 Mark]
- (ii) Find the area of the removed small square in terms of b . [1 Mark]
- (iii) (a) Write an expression for the area of the shaded L-shaped region, and simplify it using a suitable identity. [2 Marks]

OR

- (iii) (b) Find the area of the shaded region when $a = 15$ cm and $b = 7$ cm. [2 Marks]

16. Three friends, Meera, Nikhil, and Ojas, invest ₹12,000, ₹18,000, and ₹30,000 respectively in a small business. At the end of the year, they earn a total profit of ₹18,000, to be shared in proportion to their investments.

Based on the above information, answer the following:

- (i) Find the ratio of their investments in simplest form. [1 Mark]
- (ii) Find Nikhil's share of the profit. [1 Mark]
- (iii) (a) Find the difference between Ojas's share and Meera's share of the profit. [2 Marks]

OR

- (iii) (b) If the total profit were instead shared equally among the three friends, how much would each receive? [2 Marks]

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(Teaching Mathematics online/offline passionately since 2013)

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