AN EDUCATIONAL INSTITUTE

# Practice Paper (Mid-Term) — Set 3

***(Based on Ganita Prakash – Part I)***

**Session: 2026-27 CLASS – VIII**

**SUBJECT – MATHEMATICS**

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

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**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 $\frac{based}{case}$-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 $\frac{based}{case}$-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.

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## 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)** Using the pattern $1 + 3 + 5 + ... = n^2$, find the sum of the first 5 odd numbers. **[1]**

| | |
|---|---|
| (a) 15 | (b) 20 |
| (c) 25 | (d) 30 |

**(ii)** Which of the following is a perfect cube? **[1]**

| | |
|---|---|
| (a) 128 | (b) 216 |
| (c) 300 | (d) 400 |

**(iii)** If the cost of 8 pens is ₹96, the cost of 13 pens will be: **[1]**

| | |
|---|---|
| (a) ₹144 | (b) ₹150 |
| (c) ₹156 | (d) ₹160 |

**(iv)** $a^2 + 2ab + b^2$ is equal to: **[1]**

| | |
|---|---|
| (a) $(a - b)^2$ | (b) $(a + b)^2$ |
| (c) $a^2 - b^2$ | (d) $(a + b)(a - b)$ |

**(v)** Which quadrilateral has exactly one pair of parallel sides? **[1]**

| | |
|---|---|
| (a) parallelogram | (b) rhombus |
| (c) trapezium | (d) kite |

**(vi)** Write MMDX in Hindu-Arabic numerals. **[1]**

| | |
|---|---|
| (a) 2500 | (b) 2510 |
| (c) 2515 | (d) 2520 |

**(vii)** $(a^3)^{-2}$ equals: **[1]**

| | |
|---|---|
| (a) $a^6$ | (b) $a^{-6}$ |
| (c) $a^{-5}$ | (d) $a^5$ |

**(viii)** The general form of a multiple of 7 is: **[1]**

| | |
|---|---|
| (a) k + 7 | (b) 7k |
| (c) 7 − k | (d) $\frac{k}{7}$ |

**(ix)** The square root of 7396 is: **[1]**

| | |
|---|---|
| (a) 84 | (b) 86 |
| (c) 88 | (d) 90 |

**(x)** Two quantities x and y are such that xy = constant. This type of variation is called: **[1]**

| | |
|---|---|
| (a) direct proportion | (b) inverse proportion |
| (c) no proportion | (d) additive proportion |

**(xi)** In a square, the diagonals intersect at: **[1]**

| | |
|---|---|
| (a) 30° | (b) 45° |
| (c) 60° | (d) 90° |

**(xii)** Using a suitable identity, $197^2$ is: **[1]**

| | |
|---|---|
| (a) 38809 | (b) 38909 |
| (c) 37809 | (d) 39809 |

## SECTION-B

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

**2.** Find the smallest number by which 2560 must be divided to make it a perfect cube. **[2]**

**3.** Simplify: $(3^{-1} + 2^{-1}) \times 6$ **[2]**

**4.** Find all four angles of a quadrilateral if they are in arithmetic progression with first term 60° and common difference 20°. **[2]**

**5.** (a) Write CMXCIX in Hindu-Arabic numerals.

**OR**

**(b)** Find four consecutive multiples of 6 whose sum is 180. **[2]**

**6.** A map is drawn to a scale of 1 cm : 50 km. Find the actual distance for a map distance of 7.5 cm. **[2]**

**7.** Find the value of (a − 5)(a + 5) using a suitable identity, when a = 21. **[2]**

## SECTION-C

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

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

(i) MCM − DCLXVI
(ii) DCCCXC − CDLV

**[3]**

**9.** (a) ABCD is a kite with AB = AD = 7 cm and CB = CD = 10 cm. If ∠B = 95°, find ∠D, stating the property used.

**OR**

**(b)** Construct a rhombus whose diagonals are 5 cm and 8 cm. Write the steps of construction. **[3]**

**10.** Expand the following:

(i) $(4x - 3y)(2x + 5y)$
(ii) $(a + b + c)^2$

**[3]**

## SECTION-D

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

**11.** (i) Find the smallest number by which 4500 must be multiplied so that the product is a perfect cube. Also find the cube root of the product.

(ii) Find the square root of 11025 by prime factorisation.

**[5]**

**12.** (i) Simplify: $2^{5x} \div 2^{3x+1}$

(ii) Find the value of n if $2^n = 64$.

**[5]**

**OR**

(i) Simplify: $(5^{-2})^{-1} \div 5^{-3}$
(ii) Evaluate: $(\frac{2}{3})^{-2} \times (\frac{2}{3})^2$

**[5]**

**13.** Solve the following puzzles:

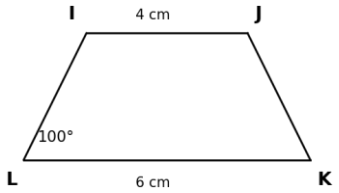
(i) AB × 4 = CBA (find the digits A, B, C)
(ii) 5x2y6 is divisible by 36. List all possible values of the digits x and y.
(iii) Write the general form of a number that is divisible by 11.

**[5]**

## SECTION-E

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

**14.** IJKL is an isosceles trapezium with IJ ∥ LK, IJ = 4 cm, LK = 6 cm, IL = JK, and ∠L = 100°.




Based on the above information, answer the following:

(i) Find the measure of ∠K, stating the property used. [1 Mark]
(ii) Find the measure of ∠I, stating the property used. [1 Mark]
(iii) (a) Find the measure of ∠J. [2 Marks]

**OR**

(iii) (b) If leg IL = 5 cm, find the perimeter of the trapezium IJKL. [2 Marks]

**15.** A farmer has a square plot of land with side (a + 8) metres. He plants crops on a smaller square region of side (a − 3) metres within it.

Based on the above information, answer the following:

(i) Find the area of the total plot in terms of a. [1 Mark]
(ii) Find the area of the cropped region in terms of a. [1 Mark]
(iii) (a) Find the area of the remaining (uncropped) land in terms of a, simplified fully using a suitable identity. [2 Marks]

**OR**

(iii) (b) If a = 12 m, find the numerical area of the remaining uncropped land. [2 Marks]

**16.** A train covers 360 km in 4 hours at constant speed.

Based on the above information, answer the following:

(i) Find the speed of the train in km per hour. [1 Mark]
(ii) How far will it travel in 6.5 hours at the same speed? [1 Mark]
(iii) (a) How long will it take to cover 630 km? [2 Marks]

**OR**

(iii) (b) Check whether the following are in proportion: 4 hours : 360 km :: 7 hours : 630 km. [2 Marks]

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