AN EDUCATIONAL INSTITUTE

Practice Paper (Mid-Term) — Set 5

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

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) Which of the following is NOT a property of every parallelogram? **[1]**

(a) Opposite sides are equal	(b) Opposite angles are equal
(c) Diagonals are equal	(d) Diagonals bisect each other

(ii) In the Egyptian numeral system (**9** = 100, ∩ = 10, | = 1), which of the following represents 325? **[1]**

(a) **999**∩∩|||||	(b) **99**∩∩∩|||||
(c) **999**∩|||||	(d) **999**∩∩∩||

(iii) Find the digital root of 987654. **[1]**

(a) 1	(b) 2
(c) 3	(d) 4

(iv) $x^0 + y^0$ equals (for non-zero x, y): **[1]**

(a) 0	(b) 1
(c) 2	(d) xy

(v) $a^3 - b^3$ factorises as $(a - b)$ times: **[1]**

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

(vi) The smallest perfect square greater than 300 is: **[1]**

(a) 289	(b) 300
(c) 324	(d) 361

(vii) The cost of articles is directly proportional to the number of articles. If 5 articles cost ₹75, find the cost of 12 articles. **[1]**

(a) ₹170	(b) ₹175
(c) ₹180	(d) ₹185

(viii) A square is a special type of: **[1]**

(a) only a rectangle	(b) only a rhombus
(c) both a rectangle and a rhombus	(d) neither

(ix) Write MCD in Hindu-Arabic numerals. **[1]**

(a) 1300	(b) 1400
(c) 1500	(d) 1600

(x) If $a + b = 10$ and $ab = 21$, find the value of $a^2 + b^2$ using a suitable identity. **[1]**

(a) 52	(b) 55
(c) 58	(d) 61

(xi) $2^{50} \div 2^{48}$ equals: **[1]**

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

(xii) Find the units digit of 7^{25}. **[1]**

(a) 1	(b) 3
(c) 7	(d) 9

SECTION-B

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

2. Find the smallest number by which 1188 must be multiplied to make it a perfect square. **[2]**

3. Simplify: $(2^4 \times 2^{-2}) \div 2^{-3}$ **[2]**

4. One angle of a parallelogram is $x°$, and the adjacent angle is $(x + 30)°$. Find the value of x. **[2]**

5. (a) Write CCXCIX in Hindu-Arabic numerals.

OR

(b) Find three consecutive multiples of 4 whose sum is 84. **[2]**

6. If the price of 15 kg of rice is ₹630, find the price of 22 kg. **[2]**

7. Using a suitable identity, find the value of $(2x + 5)(2x - 5)$ when $x = 10$. **[2]**

SECTION-C

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

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

(i) CDXCIX + CXI
(ii) DCCLXX + CXXX

[3]

9. (a) PQRS is a square of side 10 cm, and diagonal PR is drawn. Find the length of PR and the measure of ∠QPR, stating the properties used.

OR

(b) Construct a square of side 6 cm and measure the length of its diagonal. **[3]**

10. Expand the following:

(i) $(6p - 5q)(6p + 5q)$
(ii) $(2x + 3)^2 - (2x - 3)^2$ [using a suitable identity]

[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 2916 must be divided so that the quotient is a perfect cube. Also find the cube root of the quotient.

(ii) Find the square root of 18496 by prime factorisation.

[5]

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

(ii) Find the value of y if $7^{3y} = 343$.

[5]

OR

(i) Simplify: $(8^{-1} \times 8^3) \div 8^{-1}$
(ii) Evaluate: $(½)^{-3} \times (½)^3$

[5]

13. Solve the following puzzles:

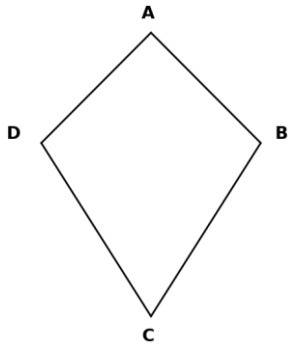
(i) PQ × 7 = RPQ (find the digits P, Q, R)
(ii) 6a4b2 is divisible by 12. Find any three possible pairs of values for a and b.
(iii) Write the general form of a number that leaves remainder 1 when divided by 6.

[5]

SECTION-E

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

14. ABCD is a kite with AB = AD and CB = CD, and diagonals AC and BD intersecting at right angles.



Based on the above information, answer the following:

(i) If AB = 9 cm, find AD. [1 Mark]
(ii) (a) If ∠ABC = 115°, find ∠ADC, stating the property used. [2 Marks]

OR

(ii) (b) Show that diagonal AC bisects ∠BAD and ∠BCD. [2 Marks]
(iii) If ∠BAD = 70°, and ∠ABC = ∠ADC = 115° each, find ∠BCD (using the angle sum of a quadrilateral). [1 Mark]

15. A rectangular park has length (3x + 4) metres and breadth (2x − 1) metres.

Based on the above information, answer the following:

(i) Write an expanded expression for the area of the park in terms of x. [1 Mark]
(ii) If x = 5, find the numerical area of the park. [1 Mark]
(iii) (a) Find the perimeter of the park in terms of x. [2 Marks]

OR

(iii) (b) If x = 5, find the numerical perimeter of the park. [2 Marks]

16. A car consumes 1 litre of petrol to travel 16 km. The distance covered is directly proportional to the amount of petrol used.

Based on the above information, answer the following:

(i) How far will the car travel using 7.5 litres of petrol? [1 Mark]
(ii) How many litres are needed to travel 200 km? [1 Mark]
(iii) (a) If the car travels 360 km, how many litres were used? [2 Marks]

OR

(iii) (b) Check whether the following are in proportion: 1 litre : 16 km :: 5 litres : 80 km. [2 Marks]

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