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

Directorate of Education, GNCT of Delhi
Practice Paper (Mid-Term)
Session: 2025-26
Class – VIII
Subject-Mathematics

Duration: $2\frac{1}{2}$ hours **Max. Marks: 60**

GENERAL INSTRUCTIONS:

Read the following instructions carefully and follow them:

1. This question paper has 16 questions. All questions are compulsory.
2. Question paper is divided into **FIVE** sections-Section A, B, C, D and E.
3. In section A-question number 1 has multiple choice questions (MCQs) of 1 mark each.
4. In section B-question number 2 to 7 are objective type questions of 02 marks each.
5. In section C-question number 8 to 10 are short answer (SA) type questions carrying 03 marks each.
6. In section D-question number 11 to 13 are long answer (LA) type questions carrying 05 marks each.
7. In section E-question number 14 to 16 are source based/case study questions carrying 04 marks each.
8. There is no overall choice. However, an internal choice has been provided in 1 question in Section B, 1 question in Section C, 2 questions in Section D and in each 2 marks questions in Section E.
9. Draw neat figures wherever required. Take $\pi = \frac{22}{7}$ wherever required if not stated.
10. Use of calculator is NOT allowed.
11. **Please write down the serial number of questions before attempting it.**

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) Multiplicative inverse of a negative rational number is:

(a) a positive rational number (b) a negative rational number

(c) 0 (d) 1

1 (ii) If $8x - 3 = 25 + 17x$, then x is:

(a) a fraction (b) an integer

(c) a rational number (d) cannot be solved

1 (iii) The name of the regular polygon with 4 sides is a:

(a) Square (b) rhombus

(c) Rectangle (d) Parallelogram

1 (iv) The probability of getting a multiple of 2 when a die is rolled is:

(a) $\frac{1}{3}$ (b) $\frac{1}{6}$

(c) $\frac{2}{3}$ (d) $\frac{1}{2}$

1 (v) A square board has an area of 144 square units. How long is each side of the board?

(a) 11 units (b) 12 units

(c) 13 units (d) 14 units

1 (vi) The height of a rectangle in a histogram shows the:

(a) Width of the class (b) Upper limit of the class

(c) Lower limit of the class (d) Frequency of the class

1 (vii) For which of the following figures, diagonals are equal?

(a) Square (b) Trapezium

(c) Rhombus (d) Parallelogram

1 (viii) In a frequency distribution with classes 0 –10, 10 –20 etc., the size of the class intervals is 10. The lower limit of fourth class is:

(a) 40 (b) 50

(c) 20 (d) 30

1 (ix) The one's digit of the cube of 23 is:

(a) 6 (b) 7

(c) 3 (d) 9

1 (x) If three angles of a quadrilateral are each equal to 75°, the fourth angle is:

(a) 90° (b) 135°

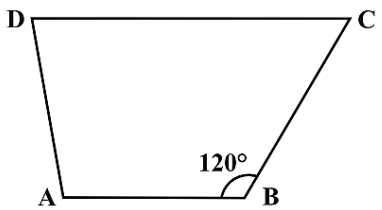
(c) 145° (d) 155°

1 (xi) Which of the following is the square of an odd number?

(a) 256 (b) 361

(c) 144 (d) 400

1 (xii) If AB ‖ DC, then the measure of ∠C is:



(a) 40° (b) 60°

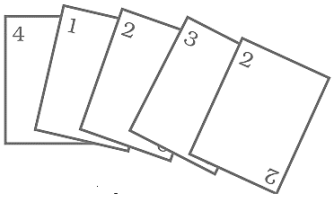
(c) 70° (d) 120°

SECTION-B

Question 2 to 7 are Objective Type Questions of 2 marks each **(6× 2 = 12)**

2. Express 81 as the sum of first nine consecutive odd numbers.

3. Rohan and Shalu are playing with 5 cards as shown in the figure. What is the probability of Rohan picking a card without seeing, that has the number 2 on it?



OR

A glass jar contains 6 red, 5 green, 4 blue and 5 yellow marbles of same size. Hari takes out a marble from the jar at random. What is the probability that the chosen marble is of red colour?

4. If one side of a cube is 5m in length, find its volume.

5. Solve for x: $\frac{8}{x} = \frac{5}{x-1}, x \neq 0$

6. Find the area of a square field if its perimeter is 96m.

7. In a parallelogram PQRS, if ∠P = 60°, then find the degree measure of remaining three angles.

SECTION-C

Question 8 to 10 are Short Answer Type Questions of 3 marks each **(3× 3 = 9)**

8. The perimeters of two squares are 40 and 96 metres respectively. Find the perimeter of another square equal in area to the sum of the first two squares.

OR

Using prime factorization, find the square root of 11025.

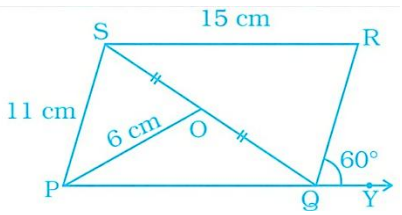
9. Solve for t: $\frac{6t+1}{3} + 1 = \frac{t-3}{6}$

10. Find the length of each side of a cube if its volume is 512 cm^3.

SECTION-D

Question 11 to 13 are Long Answer Type Questions of 5 marks each **(3× 5 = 15)**

11. In parallelogram PQRS, O is the mid-point of SQ. Find ∠S, ∠R, PQ, QR and length of the diagonal PR.



12. Histogram given on the right shows the number of people owning the different number of books. Study the histogram and answer the following questions:

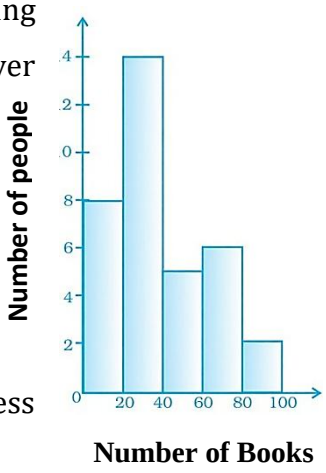
(a) Find the total number of people surveyed.

(b) How many people own more than 60 books?

(c) Find the number of people owning less than 40 books.

(d) How many people own more than 20 books.

(e) Find the number of people having more than 20 but less than 40 books.



OR

Draw a pie chart showing the following information. The table shows the colours preferred by a group of people.

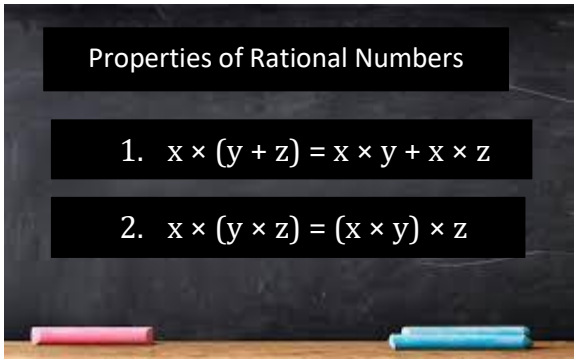
Colours	Number of People
Blue	18
Green	09
Red	06
Yellow	03
Total	**36**

13. Find a Pythagorean triplet whose smallest member is 8.

SECTION-E

Question 14 to 16 are Source Based/Case Study Questions of 4 marks each **(3× 4 = 12)**

14. In a mathematics activity, students are exploring the properties of rational numbers. Their teacher writes an expression on the black-board:



where x, y and z are rational numbers.

Based on the above information answer the following questions:

(i) Name the property 1 written on the black-board. 1

(ii) Name the property 2 written on the black-board. 1

(iii) Verify the property 1 when $x = \frac{1}{2}$, $y = \frac{1}{3}$, $z = \frac{1}{4}$. 2

OR

Verify the property 2 when $x = \frac{1}{3}$, $y = -\frac{1}{2}$, $z = \frac{1}{5}$.

15. Ms. Paridhi was explaining the properties of parallelograms to the students of her class. She drew the following figure on the black board.

Based on the above information answer the following questions:

(i) Find the degree measure of ∠C. 1

(ii) Find the degree measure of ∠B. 1

(iii) If AB = 8 cm and BC = 6 cm, find the perimeter of ||^{gm}ABCD. 2

OR

Find the sum of all angles of ||^{gm}ABCD.

16. During a classroom activity, the teacher narrated the story of the Hardy–Ramanujan number 1729. She explained that it is the smallest number that can be expressed as the sum of two cubes in two different ways:

$$1729 = 10^3 + 9^3 = 12^3 + 1^3$$

Based on the above information answer the following questions:

(i) Find the cube of 9. 1

(ii) Find the cube of 5. 1

(iii) Using prime factorization, find the cube root of 1728. 2

OR

Using the prime factorization, find the cube root of 1331.