KOTHARI INTERNATIONAL SCHOOL, NOIDA
ANNUAL EXAMINATION , SESSION 2025-2026
GRADE: 6 SUBJECT: MATHEMATICS
SET: B SECTION B (SUBJECTIVE)

DAY & DATE : TUESDAY, 24th FEBRUARY 2026
MAXIMUM MARKS: 60 TIME ALLOTTED: 2 HOURS 30 MINUTES
NAME: _____ ROLL NO: _____

GENERAL INSTRUCTIONS:
1. This question paper consists of 4 pages and 22 questions. All questions are compulsory.
2. The paper contains three type of questions
- ***Q. No.1 to 11 are of 2 marks each.***
- ***Q. No.12 to 17 are of 3 marks each.***
- ***Q. No.18 to 22 are of 4 marks.***

3. Read the question paper carefully and then attempt it.

SECTION B

Q1. **In a strategy game, players manage a 4×4 grid of supercells, each represented by a five-digit number. The current grid contains some supercells with special properties. The challenge is to analyze the existing grid, identify all the supercells. This task tests your observation and problem-solving skills to optimize the grid layout effectively.** **(2)**

61000	**60800**	**61500**	**61200**
60600	**61800**	**60700**	**60500**
60300	**60400**	**62000**	**60200**
60000	**60100**	**59900**	**59800**

Identify and write all the supercells.

Q2. **Check whether the fractions $\frac{15}{27}$ and $\frac{25}{35}$ are equivalent or not. Show the working.** **(2)**

Q3. **Represent the following fractions on the number line:** **(2)**
(i) $\frac{7}{8}$
(ii) $\frac{12}{9}$

Q4. **Write down the complete Collatz sequence for the starting number 64.** **(2)**

Q5. **A shape looks identical when rotated by 60°, 120°, 180°, 240°and so on until 360°.** **(2)**
a) What is its order of rotational symmetry?
b) What regular shape could it be?

Q6. **The sum of two integers is 910 . If one of the integers is -460, find the other.** **(2)**

Q7. **A lift starts at the ground floor (0). It goes up 8 floors, then down 10 floors, and finally up 6 floors. Where does it stop?** **(2)**

Q8. **Construct a rectangle one of whose sides is 6 cm and the diagonal is of length 10 cm.** **(2)**

Q9. **Complete the grid to make the required <u>border sum</u> as -12.** **(2)**

	-5	-1
-4		
	-7	-3

Q10. **Compare the following numbers and fill in the blank with >, = or <** **(2)**
(-120) + 112_____ (-112) + 200

Q11. **Match the following :** **(2)**

COLUMN 1	COLUMN II
SHAPE	NUMBER OF LINES OF SYMMETRY
(A) SCALENE TRIANGLE	(I) INFINITE
(B) CIRCLE	(II) 0
(C) SQUARE	(III) 0
(D) TRAPEZIUM	(IV) 4

SECTION C

Q12. **Evaluate the following using <u>token model</u> :** **(3)**
(a) (+10)+(+4)
(b) (+11) – (+8)

Q13. **(a) Consider the first ten capital letters of English alphabet, list among them the letters which have :** **(2)**

(i) Vertical lines of symmetry
(ii) Horizontal lines of symmetry
(iii) No lines of symmetry
(iv) Both-vertical and horizontal lines of symmetry

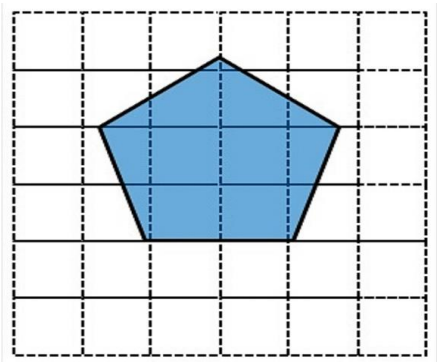
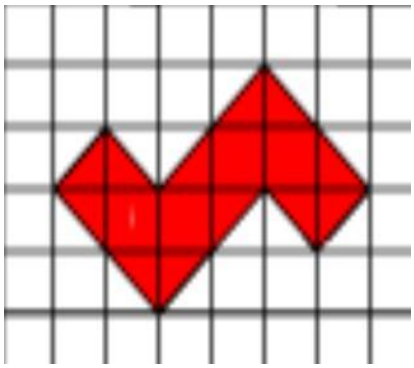
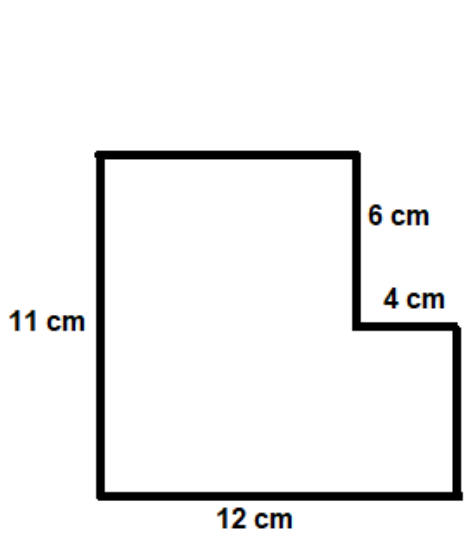
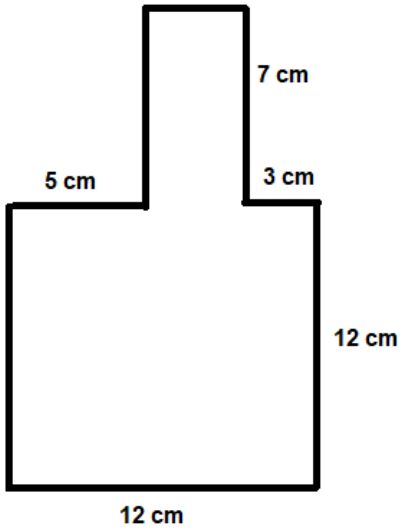
(b) Draw a figure that exhibits both reflection (mirror) symmetry and rotational symmetry. **(1)**

Q14. **Construct a rectangle in which one of the diagonals divides the opposite angles into 70° and 20°.** **(3)**

Q15. **A square-shaped park ABCD of side 120 m has two equal rectangular flower beds, each of size 12 m × 6 m. What is the area of the remaining park?** **(3)**

Q16. **A wire is bent to form a square of side 12 cm. The same wire is then bent to form a rectangle whose length is 16 cm. Find the breadth of the rectangle.** **(3)**

Q17.	**Radha and her three cousins visited a fair. They bought a large rectangular chikki and decided to share it equally. The shopkeeper cut the chikki into 12 equal parts, similar to the chikki division. Radha ate 3 parts, while each cousin ate 2 parts. After eating, they compared how much each one had eaten and tried converting their shares into fractional units. Radha wanted to know if she ate more than each cousin and if her share could be written in lowest terms.**  **Based on the above, answer the following questions :** **(a) Express the fraction of chikki Radha and her cousin ate in lowest form.** **(b) Who ate more and by how much?**	**(1)** **(2)**
	SECTION D	
Q18.	**(a) Using the number line, write the integer which is 8 more than -7.** **(b) When I am added to -74, the result is -57. Who am I?** **(c) Simplify the following :** **(−17)−(−33)+(−8)−(+4)**	**(1)** **(1)** **(2)**
Q19.	**A student had always found math problems a bit tedious, but this one was different. His teacher had given him a challenging puzzle: start with the number 9210 and find its Kaprekar's sequence. "Kaprekar's sequence?"He thought. "It sounds like a secret code." As he began arranging the digits and performing the subtractions, he felt like a detective, getting closer to a hidden secret with each step.**  **(a) Show the steps for the number 9210 to reach the constant.** **(b) What is Kaprekar's constant for 4-digit numbers?**	**(3)** **(1)**
Q20.	**Let A, B be the centres of two circles of equal radii; draw them so that each one of them passes through the centre of the other. Let them intersect at C and D. Examine whether AB and CD are at right angles.**	**(4)**

Q21.	**(a) The following figures are drawn on a squared paper. Count the number of squares enclosed by each figure and find its area, taking the area of each square as 1 cm^2.**  **(I)**  **(II)** **(b) A farmer wants to fence his rectangular field (80 m × 60 m) five times. What length of fencing is needed?**	**(2)** **(2)**
Q22.	**Kiran wants to find the area of the figure using area of rectangle. She splits the figure into rectangles. Find the unknown measurements and find the area of following figures. (The measures are given in centimetres)**  **(I)**  **(II)**	**(4)**