

KENDRIYA VIDYALAYA SANGATHAN-MUMBAI REGION
HALF YEARLY EXAMINATION 2025-26

CLASS: VI

SUBJECT: MATHS (041)

Time: 02.30 Hours
60

Max Marks:

SAMPLE PAPER

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General Instructions:

All questions are compulsory.

The question paper consists of 28 questions divided into five sections A, B, C, D and E.

Section-A comprises 12 MCQ questions of 1 mark each.

Section- B comprises 6 VSA questions of 2 marks each.

Section- C comprises 6 SA questions of 3 marks each.

Section- D comprises 2 CASE STUDY questions of 4 marks each and

Section- E comprises 2 LA questions of 5 marks each.

Q.NO	QUESTION	MARKS
(1)	Virahanka numbers are (a) 1, 3, 6, 10,... (b) 1, 2, 3, 4.... (c) 1, 2, 3, 5, 8.... (d) 1, 7, 19, 37...	1
(2)	The study of patterns in shapes is known as: (a) Algebra (b) Trigonometry (c) Geometry (d) Number theory	1
(3)	How many sides does a heptagon have (a) 7 (b) 5 (c) 10 (d) 8	1
(4)	Sheetal marked two points on a piece of paper. How many different lines can she draw that pass through both of the points? (a) 2 (b) 3 (c) many (d) 1	1
(5)	The obtuse angle whose measure in degree is (a) 90 (b) less than 180 but greater than 90 (c) greater than 180 (d) 180	1
(6)	Using the digits 2,0,8,7 without repetition the greatest number obtained is _____. (a) 7802 (b) 8072 (c) 8720 (d) 8207	1
(7)	How many 3-digit numbers are there? (a) 999 (b) 900 (c) 910 (d) 989	1
(8)	In a bar graph, bars are made (a) horizontally (b) vertically (c) sometime horizontally sometime vertically (d) oblique	1

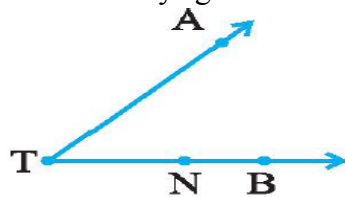
- (9) If picture of one electric bulb is used to represent 20 bulbs, then a picture of a half bulb will represent 1
 (a) 10 bulbs (b) 16 bulbs (c) 15 bulbs (d) 12 bulbs
- (10) The number of multiples of given number is 1
 (a) 1 (b) 2 (c) finite (d) infinite
- (11) How many factors does 36 have? 1
 (a) 7 (b) 9 (c) 10 (d) 8
- (12) The exact divisor of 8 is 1
 (a) 2 (b) 3 (c) 5 (d) 6

Q.NO

SECTION –B (VERY SHORT ANSWER)

MARKS

- (13) Write and draw the dotted representation of the first 4 triangular numbers. 2
- (14) Name the rays given in the below figure. Is T a starting point of each of these rays? 2



- (15) Observe the following number patterns. Without adding each number one by one, find the total sum of the numbers in each figure. 2
- a. b.

- (16) Write a table such that the cell having the second largest number is not a supercell. 2
- (17) The sale of electric bulbs on different days of the month is shown below. From the following pictograph answer the following question: 2

Months	Number of Electric Bulb, = 5 bulbs
January	
February	
March	
April	

- (a) In which month the sale of electric bulbs is maximum.
- (b) In which month the sale of electric bulbs is minimum.
- (c) Find the number of electric bulbs purchased for lodging houses during April.
- (d) Find the number of electric bulbs purchased for lodging houses during March
- (18) Write first four multiples of 23 and 36. 2
- Q.NO** **SECTION-C (SHORT ANSWER)** **MARKS**
- (19) Write numbers from 1 to 50 3
 (a) Circle all the Virahanka numbers
 (b) Colour with blue for the cube numbers
 (c) Cross all the Koch-snowflakes
- (20) What will be the sum of $1 + 2 + 3 + \dots + 99 + 100 + 99 + \dots + 3 + 2 + 1$. 3
- (21) Draw a rough figure and write labels appropriately to illustrate each of the following: 3
 (A) Line l contains points E and F but not point D.

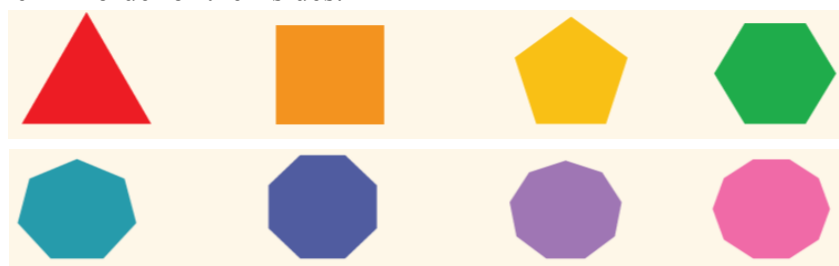
- (B) Point P lies on line AB
(C) Rays XY and XZ form an angle $\angle YXZ$.
- (22) State the rule for the Collatz Conjecture and apply the Collatz Conjecture to the number 19 and show the sequence obtained. **3**
- (23) What do you understand about “artistic and aesthetic considerations” in data handling? Give one example to show why choosing the right scale is important. **3**
- (24) Find the common factor of the following: **3**
- (a) 24 and 32
(b) 6 and 12

Q.NO.

SECTION-D (CASE BASED QUESTIONS)

MARKS

- (25) Rina was decorating her scrapbook. She cut coloured papers in the shape of polygons: triangle, square, pentagon, hexagon, heptagon, octagon, nonagon and decagon. She arranged them in order of their sides.



- (a) Write a sequence of polygons from least to most sides.
(b) Which polygon has 3 more sides than a hexagon?
(c) Find the difference between the number of sides of a triangle and a decagon.
(d) Write the number of vertices of the hexagon and octagon
- (26) An archaeologist finds a tablet detailing an ancient encryption method. The process, which they name the "Kaprekar Scramble," works on 4 digit keys. The tablet shows the key 3087 was scrambled. **4**



- (a) To begin the scramble of key 3087, what is the largest number that can be formed from its digits?
(b) What is the smallest number that can be formed from the digits of 3087?
(c) Find the difference between the largest and smallest numbers.
What is the stable "magic number" that the 4-digit Kaprekar Scramble always converges to?
(d) What is the stable "magic number" that the 4-digit Kaprekar

Scramble always converges to?

SECTION-E (LONG ANSWER)

MARKS

- (27)** The following table represents the choice of fruits made by his classmates.

Name of fruits	Number of students
Banana	10
Orange	15
Apple	20
Grapes	25
Guava	5

5

Draw a bar graph to represent the above information choosing a suitable scale of your choice.

- (28)** Draw the angle of following measure:

- (a) 170°
- (b) 25°
- (c) 60°
- (d) 320°
- (e) 115°

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