KENDRIYA VIDYALAYA SANGATHAN-MUMBAI REGION HALF YEARLY EXAMINATION 2025-26 CLASS: VIII SAMPLE QUESTION PAPER SUBJECT: MATHEMATICS (041) Time: 02.30 Hours Max Marks: 60

General Instructions:

All questions are compulsory.

The question paper consists of 27 questions divided into five sections A, B, C, D and E.

Section-A comprises 10 MCQ questions of 1 mark each.

Section- B comprises 7 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	SECTION-A (MCQ) MAR	RKS
1.	Which of the following numbers is a perfect square?	1	
	a) 625 b)	729	
	c) 324 d)	242	
2.	Which of the following is a perfect cube?	1	
	a) 392 b)	512	
	c) 308 d)	728	
3.	Value of 9 ² is	1	
	a) 1 b)	81	
	$\begin{array}{c c} a) & \frac{1}{81} \\ \end{array} \qquad \qquad b)$		
	c) -81 d)	$\frac{1}{9}$	
		-	
4.	A quadrilateral with diagonals bisecting at right angles		
	a) Parallelogram b)	Square	
	c) Rhombus d)	Rectangle	
5.	The cube root of 1331 is	1	
	a) 13 b)	11	
	c) 14 d)	15	
6.	Which of the following numbers is in standard form?	1	
	a) 0.00045×10^5 b)	45×10^3	
	c) 4.5×10^2 d)	450×10^2	
7.	Which numeral system used base 60?	1	
	a) Roman b)	Mesopotamian	
	c) Egyptian d)	Greek	
8.	If $3^4 \times 3^3 = 3^n$ then $n = ?$	1	
	a) 5 b)	6	
	c) 7 d)	8	

9.	3645 can be written as in roman numerals as	1		
'•	a) MMDCLXV b) MMDDCXLV			
	c) MMMDCLXV d) MMMDCXLV			
10.	How many diagonals are there in a quadrilateral?	1		
10.	a) 1 b) 2			
	c) 3 d) 4			
Q.NO	SECTION -B (VERY SHORT ANWERS)	MARKS		
11	Find the square root of 8100 by prime factorisation			
12	Write the Roman numeral for 348			
13	Simplify: $\left(\frac{3}{4}\right)^{-2}$			
14	Check whether 327 is a perfect square or not?	2		
15	Write the numerical value of $(-2)^5 \times (-10)^6$	2		
16	In a parallelogram, one angle is 70°. Find the measures of the other three angles.			
17	Simplify	2		
	(a) CCLXV + DCXXII			
	(b) CCCLXXIII - CCXII			
Q.NO	SECTION-C (SHORT ANSWERS)			
18	Express the number 32400 as a product of its prime factors and represent the prime	3		
	factors in their exponential form.			
19	19 Find the smallest square number that is divisible by each of the following number			
	9, and 10.			
20	Write the following expressions as a power of a power in at least two different ways:			
21	(i) 8^6 (ii) 7^{15}			
21	Represent 345 into Egyptian system	3		
22	In a quadrilateral ABCD, diagonals bisect each other and all sides equal. Name the			
	quadrilateral and justify.			
23	Write 3723 in Mayan number system (base 5)			
Q.NO	SECTION-D (CASE BASED QUESTIONS)			
24	Case Study 1: Playground Arrangement			
	A playground is in the shape of a rectangle of length 40 m and breadth 20 m.			
	(i) Find its area.			
	(ii) Find its perimeter.			
	(iii) If a walking track of 2 m width is constructed inside, find the remaining area.			
	(iv) Name the quadrilateral represented.			
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	A chessboard has 64 small equal squares.	4
	Questions:	
25	(i) How many rows and columns are there?	
	(ii) Find the total area if each small square is $2 \text{ cm} \times 2 \text{ cm}$	
	(iii) Write whether 64 is a perfect square or not.	
	(iv) Write whether 64 is a perfect cube or not	
Q.NO	SECTION-E (LONG ANSWER)	MARKS
26	I. In ancient times, different civilizations used different numeral systems. A	5
	 student collected the following information Egyptians used symbols like heel bone, lotus flower, etc. Romans used letters I, V, X, L, C, D, M. 	
	- Mesopotamians used base 60 system.	
	Answer the following questions:	
	(i) Write 349 in Roman numerals.	
	(ii) Write 245 using Egyptian numerals.	
	(iii) Which civilization used base 60? Name one modern use of this system.(iv) Compare Hindu-Arabic numeral system with Roman numeral system.(v) Explain why place value system is considered an improvement over earlier	
	numeral systems.	
27	(a) Simplify (i) $(2^3 \times 3^2)^2 \div 6^2$ (ii) $(7^3 \times 7^{-2} \times 7^4)$	5
	(b)If $2^x = 128$, find the value of x. Also verify by writing 128 as a power of 2	
	(c) Write the following numbers in standard form:	
	(i) 0.000000452	
	(ii) 5,820,000,000	