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

MARKING SCHEME: SAMPLE QUESTION PAPER

Q.NO		ANSWER	MARKS
1		**d.**	
2		**b.**	
3		**a.**	
4		**c.**	
5		**b.**	
6		**c.**	
7		**b.**	
8		**c.**	
9		**d.**	
10		**b.**	
11		$\sqrt{8100}$ = 90 (by prime factorisation: $\sqrt{8100}$ = $\sqrt{2x2x3x3x5x5}$	1
		$\sqrt{8100}$ = 90	1
12		348 = 300 + 40 + 5 + 3 = CCCXLVIII	2
13		$(3/4)^{-2} = (4/3)^2 = 16/9$	1 + 1
14		($18^2 = 324$, $19^2 = 361$)	1
		327 is NOT a perfect square	1
15		$(-2)^5 \times (-10)^6 = (-32) \times (10^6)$	1
		$= -32{,}000{,}000$	1
16		Parallelogram angles: given one angle = 70°. (Adjacent angles are supplementary).	1
		Other three angles are 110°, 70°, 110°	1
17		CCLXV + DCXXII = 265 + 622 = 887 = DCCCLXXXVII	1
		CCLXXIII − CCXII = 273 − 212 = 61 = LXI	1
18		Since $32400 = 324 \times 100 = (2^2 \times 3^4 \times 2^2 \times 5^2)$	2
		32400 as prime factors: $32400 = 2^4 \times 3^4 \times 5^2$	1
19		LCM (4,9,10) = $180 = 2^2 \times 3^2 \times 5^1$	2
		Smallest square = 180 × 5 = 900	1
20		(i) $8^6 = (8^2)^3 = (8^3)^2$	$1\frac{1}{2}$
		(ii) $7^{15} = (7^{3)5} = (7^5)^3$	$1\frac{1}{2}$
21		345 in Egyptian numerals: 300 + 40 + 5 (𓍢𓍢𓎆𓎆𓎆𓏺𓏺𓏺𓏺𓏺)	1,1,1
22		Since diagonals bisect each other the quadrilateral is a parallelogram;	$1\frac{1}{2}$
		With all sides equal it is a RHOMBUS. (Hence ABCD is a rhombus	$1\frac{1}{2}$
23		'Mayan (base 5)' as base-5	1
		representation: 3723 (decimal)	2

24		(i) Area = 40 × 20 = 800 m^2	**1**
		(ii) Perimeter = 2(40 + 20) = 120 m	**1**
		(iii) With 2 m wide walking track inside, inner rectangle = (40 − 2×2) × (20 − 2×2) = **(36 × 16)= 576m^2 (remaining area)**	**1**
		(iv) Quadrilateral: Rectangle	**1**
25		(i) Rows and columns = 8 × 8	**1**
		(ii) Area of one small square = 2 cm × 2 cm = 4 cm^2 ⇒ Total area = 64 × 4 = 256 cm^2	**1**
		(iii) 64 is a perfect square	**1**
		(iv) 64 is also a perfect cube (4^3 = 64)	**1**
26		(i) 349 = CCCXLIX	**1**
		(ii) 245 in Egyptian numerals = 200 + 40 + 5 (𓍢𓎆𓏺𓏺𓏺𓏺𓏺)	**1**
		(iii) Mesopotamians used base-60. Modern use: measuring time (60 seconds = 1 minute; 60 minutes = 1 hour) and angles (360° subdivided into 60 minutes/seconds).	**1**
		(iv) Correct explanation	**1**
		(v) Correct explanation	**1**
27		(a) (i) 2,	**1**
		(ii) 16807	**1**
		(b)x = 7	**1**
		(c) (i) 0.000000452 = 4.52 × 10^{-7}	**1**
		(ii)5,820,000,000 = 5.82 × 10^9	**1**