

KENDRIYA VIDYALAYA SANGATHAN, HYDERABAD REGION
SAMPLE PAPER 02 FOR PERIODIC TEST-II (2017-18)

SUBJECT: MATHEMATICS(041)

BLUE PRINT FOR PERIODIC TEST-II: CLASS IX

Chapter	VSA (1 mark)	SA – I (2 marks)	SA – II (3 marks)	LA (4 marks)	Total
Real Numbers	--	--	3(1)	--	3(1)
Polynomials	1(1)	2(1)	--	--	3(2)
Pair of Linear Equations in two variables	--	--	3(1)	--	3(1)
Quadratic Equations	--	2(1)	3(1)	--	5(2)
Arithmetic progression	1(1)	--	--	4(1)	5(2)
Coordinate Geometry	1(1)	2(1)	--	4(1)	7(3)
Introduction to Trigonometry	1(1)	2(1)	--	4(1)	7(3)
Triangles	--	--	3(1)	4(1)	7(2)
Total	4(4)	8(4)	12(4)	16(4)	40(16)

MARKING SCHEME FOR PERIODIC TEST-II (2017-18)

SECTION	MARKS	NO. OF QUESTIONS	TOTAL
VSA	1	4	04
SA – I	2	4	08
SA – II	3	4	12
LA	4	4	16
GRAND TOTAL			40

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SUBJECT: MATHEMATICS
CLASS : X

MAX. MARKS : 40
DURATION : 1½ HRS

General Instructions:

- (i). All questions are compulsory.
- (ii). This question paper contains **16** questions divided into four Sections A, B, C and D.
- (iii). **Section A** comprises of 4 questions of **1 mark** each. **Section B** comprises of 4 questions of **2 marks** each. **Section C** comprises of 4 questions of **3 marks** each and **Section D** comprises of 4 questions of **4 marks** each.
- (iv). Use of Calculators is not permitted

SECTION – A

1. If $\tan 9\theta = \cot \theta$ and $9\theta < 90^\circ$, then find the value of $\operatorname{cosec} 5\theta$.
2. Find a quadratic polynomial whose zeroes are 3 and 2.
3. Find the value of x for which $(8x + 4)$, $(6x - 2)$ and $(2x + 7)$ are in AP.
4. Find the coordinates of a point A, where AB is the diameter of a circle whose centre is $(2, -3)$ and B is $(1, 4)$.

SECTION – B

5. Find the zeroes of the quadratic polynomial $3x^2 - x - 4$ and verify the relationship between the zeroes and the coefficients.
6. Find the ratio in which the y-axis divides the line segment joining the points $(5, -6)$ and $(-1, -4)$.
7. Find the roots of the equation $2x^2 - x + \frac{1}{8} = 0$.
8. Evaluate: $\frac{4}{\cot^2 30^\circ} + \frac{1}{\sin^2 30^\circ} - 2 \cos^2 45^\circ - \sin^2 0^\circ$

SECTION – C

9. Solve : $(a - b)x + (a + b)y = a^2 - 2ab - b^2$ and $(a + b)(x + y) = a^2 + b^2$
10. Prove that $5 - 3\sqrt{2}$ is an irrational number.
11. Find the roots of the equation $2x^2 - 5x + 3 = 0$, by method of completing the square.
12. Diagonals of a trapezium ABCD with $AB \parallel CD$ intersect at O. If $AB = 2CD$, find the ratio of areas of triangles AOB and COD.

SECTION – D

13. Prove that “In a right triangle, the square of the hypotenuse is equal to the sum of the squares of the other two sides.

14. If $\operatorname{cosec}\theta - \sin\theta = m$ and $\sec\theta - \cos\theta = n$, prove that $(m^2n)^{2/3} + (mn^2)^{2/3} = 1$

15. 200 logs are stacked in the following manner: 20 logs in the bottom row, 19 in the next row, 18 in the row next to it and so on. In how many rows are the 200 logs placed and how many logs are in the top row?

16. If A(-5, 7), B(-4, -5), C(-1, -6) and D(4, 5) are the vertices of a quadrilateral, find the area of the quadrilateral ABCD.

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