

KENDRIYA VIDYALAYA SANGATHAN, HYDERABAD REGION
SAMPLE PAPER 03 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	1(1)	2(1)	--	--	3(2)
Polynomials	--	2(1)	3(1)	--	5(2)
Pair of Linear Equations in two variables	1(1)	--	--	4(1)	5(2)
Quadratic Equations	1(1)	--	3(1)	--	4(2)
Arithmetic progression	1(1)	2(1)	--	--	3(2)
Coordinate Geometry	--	2(1)	--	4(1)	6(2)
Introduction to Trigonometry	--	--	3(1)	4(1)	7(2)
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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SAMPLE PAPER 03 FOR PERIODIC TEST-II (2017-18)

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

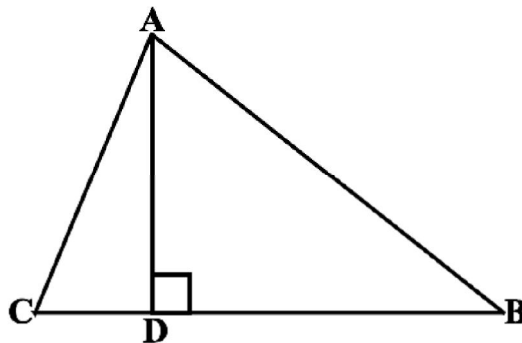
1. Find the [HCF × LCM] for the numbers 100 and 190.
2. For what values of k will the following pair of linear equations have infinitely many solutions?
 $kx + 3y - (k - 3) = 0$ and $12x + ky - k = 0$
3. The angles of a quadrilateral are in AP whose common difference is 10° . Find the angles.
4. Find the values of k for quadratic equation $2x^2 - x + k = 0$, so that they have two equal roots.

SECTION – B

5. Find the quadratic polynomial whose zeroes are $7 + \sqrt{3}$ and $7 - \sqrt{3}$.
6. Which term of the AP 24, 21, 18, 15, is first negative term?
7. Show that 6^n cannot end with the digit 0 or 5 for any natural number n .
8. Find the coordinates of the point which divides the line segment joining the points (4, - 3) and (8, 5) in the ratio 3 : 1 internally.

SECTION – C

9. The perpendicular from A on side BC of a ΔABC intersects BC at D such that $DB = 3 CD$ (see the below figure). Prove that $2 AB^2 = 2 AC^2 + BC^2$.



10. If α, β are the zeroes of the polynomials $f(x) = x^2 - 3x + 6$, then find the value of

$$\frac{1}{\alpha} + \frac{1}{\beta} + \alpha^2 + \beta^2 - 2\alpha\beta$$

11. If $\cos(A - B) = \frac{\sqrt{3}}{2}$ and $\sin(A + B) = 1$, then find the value of A and B.

12. Find the roots of the equation $\frac{1}{x+4} - \frac{1}{x-7} = \frac{11}{30}, x \neq -4, 7$.

SECTION - D

13. Prove that "The ratio of the areas of two similar triangles is equal to the square of the ratio of their corresponding sides."

14. Find the area of the triangle formed by joining the mid-points of the sides of the triangle whose vertices are (0, -1), (2, 1) and (0, 3). Find the ratio of this area to the area of the given triangle.

15. Prove that: $\frac{\tan A}{1 - \cot A} + \frac{\cot A}{1 - \tan A} = 1 + \sec A \operatorname{cosec} A$.

16. Draw the graphs of the equations $x - y + 1 = 0$ and $3x + 2y - 12 = 0$. Determine the coordinates of the vertices of the triangle formed by these lines and the x-axis, and shade the triangular region.

