

KENDRIYA VIDYALAYA GACHIBOWLI, HYDERABAD
SAMPLE PAPER 01 : PERIODIC TEST – 1 (2017 – 18)
CLASS – X
MATHEMATICS

T.T. 1:30

M.M. 40

General Instructions:

1. All questions are compulsory.
2. Question paper is divided into four sections: Section A contains 4 questions each carry 1 mark, Section B contains 4 questions each carry 2 marks, Section C contains 4 questions each carry 3 marks and Section D contains 4 questions each carry 4 marks.

SECTION – A(1 marks each)

1. Express each of the following positive integers as the product of its prime factors: (i) 3825 (ii) 7429
2. Using comparing the ratios of coefficient, find out whether the pair of linear equations are consistent, or inconsistent : $3x + 2y = 5$; $2x - 3y = 7$
3. Find a quadratic polynomial, the sum and product of whose zeroes are -3 and 5 respectively.
4. If $2x$, $x + 10$, $3x + 2$ are in A.P., find the value of x .

SECTION – B(2 marks each)

5. Find the zeroes of the quadratic polynomial $5t^2 + 12t + 7$ and verify the relationship between the zeroes and the coefficients.
6. Find the 10th term from the last term of the AP : 8, 10, 12, . . . , 126.
7. Which term of the AP : 3, 15, 27, 39, . . . will be 132 more than its 54th term?
8. Find the roots of $\frac{1}{x} - \frac{1}{x-2} = 3, x \neq 0, 2$

SECTION – C(3 marks each)

9. Solve $2x + 3y = 11$ and $2x - 4y = -24$ and hence find the value of 'm' for which $y = mx + 3$.
10. Prove that $\sqrt{5}$ is an irrational number.
11. If the sum of the first 14 terms of an AP is 1050 and its first term is 10, find the 20th term.
12. Find the roots of the equation $5x^2 - 6x - 2 = 0$, by method of completing the square.

SECTION – D(4 marks each)

13. Places A and B are 100 km apart on a highway. One car starts from A and another from B at the same time. If the cars travel in the same direction at different speeds, they meet in 5 hours. If they travel towards each other, they meet in 1 hour. What are the speeds of the two cars? While driving, the driver should maintain the speed limit as allowed. Comment

14. Solve the equation: $2\left(\frac{2x-1}{x+3}\right) - 3\left(\frac{x+3}{2x-1}\right) = 5, \left(x \neq -3, \frac{1}{2}\right)$

15. Use Euclid's division lemma to show that the cube of any positive integer is of the form $9m, 9m + 1$ or $9m + 8$.

16. If the polynomial $x^4 - 6x^3 + 16x^2 - 25x + 10$ is divided by another polynomial $x^2 - 2x + k$, the remainder comes out to be $x + a$, find k and a .

.....