

PM SHREE KENDRIYA VIDYALAYA SITAPUR

PERIODIC TEST-1 (2024-2025)

CLASS-10 (MATHS)

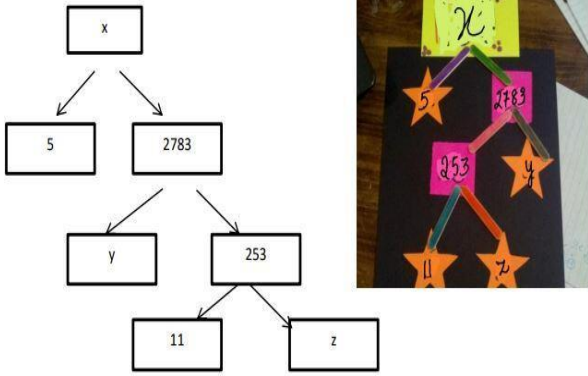
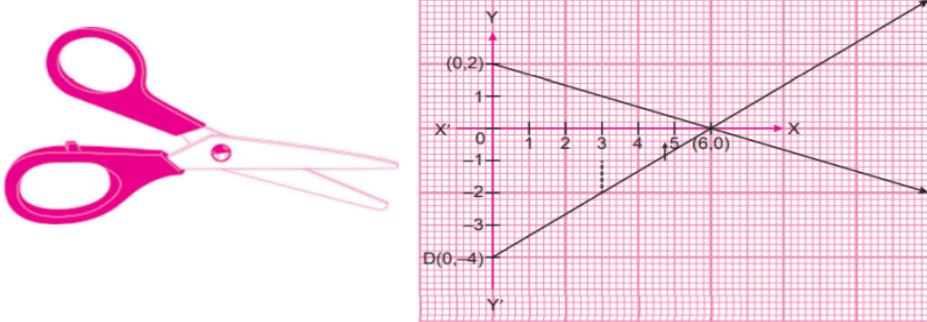
T: Marks: 40

Time: -90 minutes

INSTRUCTIONS:-

1. All questions are compulsory
2. This question paper has 19 questions which is divided into 3 sections
3. Section – A has 10 questions of 1 mark each. Section- B has 2 CCT questions of 4 marks each, and 2 assertion and reason based questions of 1 mark each
4. Section –C has 6 questions. 2 questions of 2 marks each, 2 questions of 3 marks each and 2 questions of 5 marks each.

S.NO	SECTION-A (10X1=10)	MARKS
1	Which of the following numbers can be written as a non-terminating but recurring decimal? (a) 9 (b) $43/8$ (c) $\sqrt{6}$ (d) $5/12$	1
2	If \sqrt{x} is an irrational number, then x is (a) rational (b) irrational (c) 0 (d) real	1
3	$(-2-\sqrt{3})(-2+\sqrt{3})$ when simplified is . (a) positive and irrational (b) negative and irrational (c) negative and irrational (d) negative and irrational	1
4	If the zeroes of the quadratic polynomial $x^2 + (a + 1)x + b$ are 2 and -3, then (a) $a = -7, b = -1$ (b) $a = 5, b = -1$ (c) $a = 2, b = -6$ (d) $a = 0, b = -6$	1
5	A quadratic polynomial, whose zeroes are -4 and -5, is (a) $x^2 - 9x + 20$ (b) $x^2 + 9x + 20$ (c) $x^2 - 9x - 20$ (d) $x^2 + 9x - 20$	1
6	If 1 is one of the zeroes of the polynomial $x^2 + x + k$, then the value of k is: (a) 2 (b) -2 (c) 4 (d) -4	1
7	A pair of linear equations $a_1x + b_1y + c_1 = 0$; $a_2x + b_2y + c_2 = 0$ is said to be inconsistent, if (a) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$ (b) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$ (c) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ (d) $\frac{a_1}{a_2} \neq \frac{c_1}{c_2}$	1
8	What will be the nature of the graph lines of the equations $x+3y-2$ and $2x-y+5$? (a) Parallel (b) Coincident (c) Intersecting (d) Perpendicular to each other	1
9	What will be the value of k, if the lines given by $x+ky+3$ and $2x+(k+2)y+6$ are coincident? (a) 4 (b) 2 (c) 6 (d) 8	1
10	What will be the value of k, if the lines given by $(5+k)x-3y+15$ and $(k-1)x-y+19$ are parallel? (a) 5 (b) 4 (c) 6 (d) 7	1
SECTION -B (CCT)		
11.	A Mathematics Exhibition is being conducted in your School and one of your friends is making a model of a factor tree. He has some difficulty and asks for your help in completing a quiz for the audience	

		
(a)	What will be the value of x? a) 15005 b) 13915 c) 56920 d) 17429	1
(b)	What will be the value of y? a) 23 b) 22 c) 11 d) 19	1
(c)	What will be the value of z? a) 22 b) 23 c) 17 d) 19	1
(d)	According to Fundamental Theorem of Arithmetic 13915 is a a) Composite number b) Prime number c) Neither prime nor composite d) Even number	1
12.	<p>The scissors which is so common in our daily life use, its blades represent the graph of linear equations</p>  <p>Let the blades of a scissor are represented by the system of linear equations: $x + 3y = 6$ and $2x - 3y = 12$</p>	
(a)	The pivot point (point of intersection) of the blades represented by the linear equation $x + 3y = 6$ and $2x - 3y = 12$ of the scissor is (a) (2,3) (b)(6,0) (c)(3,2)(d) (2, 6)	1
(b)	The points at which linear equations $x + 3y = 6$ and $2x - 3y = 12$ intersect y-axis respectively are (a)(0,2)and(0,6) (b)(0,2)and(6,0) (c)(0,2)and(0,-4) (d) (2, 0) and (0, -4)	1
(c)	The number of solution of the system of linear equations $x + 2y - 8 = 0$ and $2x + 4y = 16$ is (a)0 (b)1 (c)2 (d) infinitely many	1
(d)	If (1, 2) is the solution of linear equations $ax + y = 3$ and $2x + by = 12$, then values of a and b are respectively (a)(1,5) (b)(2,3) (c)(-1,5) (d) (3, 5)	1

13.	Directions: In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as: (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A). (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A). (C) Assertion (A) is true but reason (R) is false. (d) Assertion (A) is false but reason (R) is true.	
(a)	Assertion: $x^2+7x+12$ has no real zeroes. Reason: A quadratic polynomial can have at the most two zeroes.	1
(b)	Assertion: $(2 - \sqrt{3})$ is one zero of the quadratic polynomial then other zero will be $(2 + \sqrt{3})$ Reason: Irrational zeroes (roots) always occurs in pairs.	1
SECTION -C		
14.	Find the HCF and LCM of 6, 72 and 120, using the prime factorisation method.	2
15.	Find a quadratic polynomial, the sum and product of whose zeroes are - 3 and 2, respectively	2
16.	Find the zeroes of the following quadratic polynomials and verify the relationship between the zeroes and the coefficients. (i) $4u^2 + 8u$ (ii) $t^2 - 15$	3
17.	On comparing the ratios a_1/a_2 , b_1/b_2 and c_1/c_2 , find out whether the lines representing the following pairs of linear equations intersect at a point, are parallel or coincident: (i) $5x - 4y + 8 = 0$, $7x + 6y - 9 = 0$ (ii) $9x + 3y + 12 = 0$, $18x + 6y + 24 = 0$ (iii) $6x - 3y + 10 = 0$, $x - y + 9 = 0$	3
18.	Form the pair of linear equations for the following problems and find their solution by substitution method. A fraction becomes $9/11$, if 2 is added to both the numerator and the denominator. If, 3 is added to both the numerator and the denominator it becomes $5/6$. Find the fraction.	5
19.	Prove that $\sqrt{5}$ is irrational.	5