

DEV SAMAJ MODERN SCHOOL NO.- 2
PERIODIC TEST-2 (2026-2027)
Class- X Mathematics

Time: 1 Hour

Max Marks: 25

General Instructions:

- The question paper consists of 12 questions divided into 4 sections A, B, C and D
- All questions are compulsory.
- Section A comprises of 5 questions of 1 mark each (MCQs).
- Section B comprises of 3 questions of 2 marks each.
- Section C comprises of 2 questions of 3 marks each.
- Section D comprises of 2 questions of 4 marks.

Section – A

Write the correct answer in each of the following:

(1 x 5 = 5)

- 1) Ananya tosses two coins simultaneously. The probability of getting at least one head is
(a) $\frac{1}{4}$ (b) $\frac{3}{4}$ (c) $\frac{3}{5}$ (d) $\frac{1}{6}$
- 2) If two positive integers p and q be expressed as $p = ab^2$ and $q = a^3b$; where a, b being prime numbers, then LCM (p, q) is equal to
(a) ab (b) a^2b^2 (c) a^3b^2 (d) a^2b^3
- 3) For what values of k, the pair of equations $2x + 3y + 5 = 0$ and $kx + 4y = 10$ has a unique solution.
(a) $k = \frac{8}{3}$ (b) $k \neq \frac{8}{3}$ (c) $k = 3$ (d) $k \neq 3$
- 4) For an event E, $P(E) + P(\bar{E}) = x$, then the value of $x^2 - 3$ is :
(a) -2 (b) 2 (c) 1 (d) -1
- 5) For any natural number n, 6^n ends with the digit:
(a) 0 (b) 6 (c) 3 (d) 2

Section – B

- 6) A box contains 19 balls bearing numbers 1, 2, 3,.....,19. A ball is drawn at random from the box. What is the probability that the number on the ball is

- a) a prime number
- b) divisible by 3 or 5

(2)

7) Solve the following pair of linear equations:

$$3x - 5y - 4 = 0$$

$$9x = 2y + 7$$

(2)

8) A card is drawn at random from a pack of 52 playing cards. Find the probability that the card drawn is:

- a) neither an ace nor a king
- b) a face card

(2)

Section - C

9) The sum of the digits of a two-digit number is 9. The number obtained by reversing the order of digits of the given number exceeds the given number by 27. Find the given number.

OR

10) The sum of the numerator and the denominator of a fraction is 12. If the denominator is increased by 3, the fraction becomes $\frac{1}{2}$. Find the fraction.

(3)

10) Prove that $\sqrt{3}$ is an irrational number.

(3)

Section - D

11) Solve the following system of linear equations graphically and shade the region bounded by these two lines and y- axis.

$$x - y = 1 \quad \text{and} \quad 2x + y = 8$$

(4)

12) A forester wants to plant 66 apple trees, 88 banana trees and 110 mango trees in equal rows (in terms of number of trees). Also, he wants to make distinct rows of trees (i.e., only one type of trees in one row). Find the number of minimum rows required.

OR

Find HCF and LCM of 408 and 1032 and verify that $\text{HCF} \times \text{LCM} = \text{Product of the two given numbers}$.

(4)