B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL

PRE MID TERM 2025-26
MATHEMATICS

Class: X | **Time: 1hr**
Date: 07/08/25 | **Max Marks:25**
Admission no: | **Roll no:**

General Instructions:
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1. This Question Paper has 4 Sections A, B, C and D.
2. Section A has 5 MCQs carrying 1 mark each
3. Section B has 2 questions carrying 02 marks each.
4. Section C has 2 questions carrying 03 marks each.
5. Section D has 2 questions carrying 05 marks each.
6. All Questions are compulsory.

SECTION A

1. **If a pair of linear equations is consistent, then the lines will be** **1m**

(a) always coincident **(b) parallel** **(c) always intersecting** **(d) intersecting or coincident**

2. **The graph of x = -2 is a line parallel to the** **1m**
(a) x-axis **(b) y-axis** **(c) both x- and y-axis** **(d) None of these**

3. **The sum of the roots of the quadratic equation $3x^2 - 9x + 5 = 0$ is** **1m**

(a) 3 **(b) 6** **(c) -3** **(d) None of these**

4. **If α and β are the roots of $4x^2 + 3x + 7 = 0$, then the value of α x β is** **1m**

(a) 4/3 **(b) 3/4** **(c) 7/4** **(d) None of these**

5. **If the roots of $px^2 + qx + 2 = 0$ are reciprocal of each other, then** **1m**
(a) p = -2 **(b) p = 2** **(c) p = 3** **(d) None of these**

SECTION B

6. **Solve the following pair of linear equations for x and y:** **2m**
141x + 93y = 189
93x + 141y = 45

7. **If -5 is a root of the quadratic equation $2x^2 + px – 15 = 0$ and the quadratic equation $p(x^2 + x) + k = 0$ has equal roots, find the value of k.** **2m**

SECTION C

8. **The sum of the digits of a two digit number is 8 and the difference between the number and that formed by reversing the digits is 18. Find the number.** **3m**

9. **Find the value(s) of k so that the quadratic equation $3x^2 – 2kx + 12 = 0$ has equal roots** **3m**

SECTION D

10. **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.** **5m**

11. **A train travels a distance of 480 km at a uniform speed, if the speed had been 8 km per hour less, then it would have taken three hours more to cover the same distance .Find the speed of the train** **5m**

******BEST OF LUCK******