B.K. BIRLA CENTRE FOR EDUCATION

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

PERIODIC TEST-1 2026-27
MATHEMATICS: SET 2

Class: IX | **Time: 1hr**
Date: 10.06.26 | **Max Marks: 25**
Admission no: | **Roll no:**

General Instructions:

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 3 questions carrying 02 marks each.
4. Section C has 2 questions carrying 03 marks each.
5. Section D has 2 questions carrying 04 marks each.
6. All Questions are compulsory.

SECTION A

1. If the decimal representation of a number is repeating then the number is 1m
   (a) an irrational number (b) a natural number (c) a rational number (d) None of these

2. The square root of which number is irrational 1m
   (a) 49 (b) 1.44 (c) 0.4 (d) None of these

3. $(16)^{3/4}$ is equal to 1m
   (a) 27 (b) 4 (c) 8 (d) None of these

4. What in the area of an equilateral triangle with side 5 cm? 1m
   (a) 25 sq.cm (b) 36 sq.cm (c) $25\sqrt{3}/4$ sq.cm (d) None of these

5. An isosceles right triangle has an area of 18 cm^2. The length of its one of the sides other than hypotenuse is 1m
   (a) 4cm (b) 2cm (c) 36cm (d) None of these

SECTION B

7. Find the area of a triangle two sides of which are 18 cm and 10 cm and the perimeter is 42 cm. 2m

8. Insert four irrational numbers between $\sqrt{16}$ and $\sqrt{25}$. 2m

9. Represent $\sqrt{3}$ on number line. 2m

SECTION C

10. **In a triangle ABC, AB = 15cm, BC = 13cm and AC = 14cm. Find the area of triangle ABC and hence its altitude on AC.** **3m**

11. **A traffic signal board, indicating 'SCHOOL AHEAD', is an equilateral triangle with side a. Find the area of the signal board, using Heron's formula. If its perimeter is 240 cm, what will be the area of the signal board?** **3m**

12. **Show that 0.477777… can be expressed in the form $\frac{p}{q}$.** **3m**

SECTION D

13. **A gardener wants to develop a triangular flower bed in a school garden. The lengths of the three sides of the flower bed are 3 m, 4 m and 5 m. He wants to put grass over the entire flower bed. The cost of laying grass is ₹100 per square metre.** **4m**
Answer the following questions:
(i) Find the semi-perimeter of the triangular flower bed. (1 mark)
(ii) Using Heron's formula, find the area of the flower bed. (2 marks)
(iii) Find the total cost of laying grass on the flower bed. (2 marks)

14. **During revision, two students, Neha and Rahul, were discussing rationalisation of denominators.**
Neha explained that to simplify

$$\frac{5}{\sqrt{7}+\sqrt{3}}$$

we multiply numerator and denominator by $\sqrt{7}-\sqrt{3}$.
Rahul added that

$$(\sqrt{7}+\sqrt{3})(\sqrt{7}-\sqrt{3})$$

can be simplified using the identity:

$$(a+b)(a-b)=a^2-b^2$$

Questions:
(i). The rationalising factor of $\sqrt{7}+\sqrt{2}$ is:
(a) $\sqrt{7}+\sqrt{2}$
(b) $\sqrt{7}-\sqrt{2}$
(c) $\frac{1}{\sqrt{7}+\sqrt{2}}$
(d) $-\sqrt{7}+\sqrt{2}$

(ii). Find the value of:

$$(-\sqrt{6}+\sqrt{2})(\sqrt{6}-\sqrt{2})$$

(iii). Rationalise the denominator and simplify:

$$\frac{5}{\sqrt{7}+\sqrt{3}}$$

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