INDIAN SCHOOL SOHAR **SET- 2**

PERIODIC TEST 1 (2022-23)

MATHEMATICS (041)

CLASS: X **MAX. MARKS: 20**

DATE: 18/05/22 **TIME: 45 MINUTES**

General Instructions:

1. The question paper contains 11 questions. All questions are compulsory.
2. Section A comprises of 5 questions of 1 mark each. Section B comprises of 3 questions of 2 marks each. Section C comprises of 3 questions of 3 marks each.

SECTION A

1	The graph of a polynomial P(x) cuts the x-axis at 2 points and touches it at 2 other points. The number of zeroes of P(x) is a) 1 b) 2 c) 4 d) 5	1
2	Given that HCF (156, 78) = 78, LCM (156,78) is a) 156 b) 78 c) 156×78 d) 156×2	1
3	If the HCF of 65 and 117 is expressible in the form 65m – 117, then the value of m is a) 3 b) 2 c) 4 d) 1	1
4	If two positive integers a and b are written as $a = x^2 y^2$ and $b = x^3 y$, x, y are prime numbers, then LCM (a, b) is : a) $x^3 y^3$ b) $x y^2$ c) $x^2 y^2$ d) $x^3 y^2$	1
5	If α and β are the zeroes of the polynomial $p(x) = 4x^2 + 4x - 1$, then $\frac{1}{\alpha} + \frac{1}{\beta}$ is a) -4 b) 4 c) $\frac{-1}{4}$ d) $\frac{1}{4}$	1

SECTION B

6	If $x - 1$ is a factor of the polynomial $p(x) = x^3 + ax^2 + 2b$ and a + b = 4, then find the values of a and b	2
7	If α and β are the zeroes of the quadratic polynomial $p(x) = x^2 - 5x + 6$, find a quadratic polynomial whose zeroes are $\frac{\alpha}{\beta}$ and $\frac{\beta}{\alpha}$. OR Find the zeroes of the polynomial $4\sqrt{3}x^2 + 5x - 2\sqrt{3}$.	2
8	Show that 8^n, when n is a natural number cannot end with the digit 0 for any natural number ‘ n.	2

SECTION C

9	Find the zeroes of the quadratic polynomial $3x^2 - 4 - x$ and verify the relationship between the zeroes and the coefficients.	3
10	Find the smallest number which when divided by 161, 207 and 184 leaves remainder 21 in each case. OR Two tankers contain 850 liters and 680 liters of petrol. Find the maximum capacity of a container which can measure the petrol of each tanker in the exact number of times.	3
11	Prove that $3 + \sqrt{2}$ is an irrational number.	3