INDIAN SCHOOL SOHAR
PERIODIC TEST 1 (2018-19)
MATHEMATICS

CLASS: IX   **MAX.MARKS: 20**
DATE: 20/05/18   **DURATION: 45 MTS**

General Instructions:
a.   *All questions are compulsory*
b.   *The question paper consists of 9 questions divided into four sections A, B, C and D.*
c.   *Section A contains 3 questions of 1 mark each. Section B contains 2 questions of 2 marks each.*
     Section C contains 3 questions of 3 marks each. Section D contains 1 question of 4 marks each.
d.   *There is no overall choice. However, internal choice has been provided in one question of 3 marks and*
     one question of 4 marks. You have to attempt only one of the alternatives in all such questions.

SECTION A

1. Find the product of $(8 + 3\sqrt{2})(8 - 3\sqrt{2})$.

2. Write the degree of the polynomial $2x^5 - 3x^4 + 0x^7 + 2x^2 + 7x - 10$.

3. If $x^{51} + 51$ is divided by $x + 1$, then find the remainder.

SECTION B

4. If $x = 2 + \sqrt{3}$, then find the value $\left(x + \dfrac{1}{x}\right)^3$

5. Without finding the cubes, find the value of: $(42)^3 - (18)^3 - (24)^3$.

INDIAN SCHOOL SOHAR
PERIODIC TEST 1 (2018-19)
MATHEMATICS

CLASS: IX   **MAX.MARKS: 20**
DATE: 20/05/18   **DURATION: 45 MTS**

General Instructions:
a.   *All questions are compulsory*
b.   *The question paper consists of 9 questions divided into four sections A, B, C and D.*
c.   *Section A contains 3 questions of 1 mark each. Section B contains 2 questions of 2 marks each.*
     Section C contains 3 questions of 3 marks each. Section D contains 1 question of 4 marks each.
d.   *There is no overall choice. However, internal choice has been provided in one question of 3 marks and*
     one question of 4 marks.   You have to attempt only one of the alternatives in all such questions.

SECTION A

1. If $y^{21} + 21$ is divided by $y + 1$, then find the remainder.

2. Find the product of $(4 + 2\sqrt{2})(4 - 2\sqrt{2})$.

3. Write the degree of the polynomial $2x^6 - 3x^5 + 0x^8 + 2x^4 + 7x - 10$.

SECTION B

4. Without finding the cubes, find the value of: $(30)^3 + (20)^3 - (50)^3$.

5. If $x = 2 + \sqrt{3}$, then find the value $\left(x + \dfrac{1}{x}\right)^3$

SECTION C

6. If $p = \dfrac{1}{3-2\sqrt{2}}$ and $q = \dfrac{1}{3+2\sqrt{2}}$, evaluate $pq(p + q)$

7. Factorise : $1 + a + b + c + ab + bc + ac + abc$

OR

Prove that: $x^3 + y^3 + z^3 - 3xyz = \dfrac{1}{2}(x + y + z)\left[(x-y)^2 + (y-z)^2 + (z-x)^2\right]$

8. Represent $\sqrt{29}$ on the number line.

SECTION D

9. If $x^2 + \dfrac{1}{x^2} = 51$, find (i) $x - \dfrac{1}{x}$ (ii) $x^3 - \dfrac{1}{x^3}$

OR

If $p(x) = x^4 - 2x^3 + 3x^2 - ax + b$ is divided by $(x - 1)$ and $(x + 1)$, it leaves the remainder 5 and 19 respectively. Find the values of a and b.

****The End****

SECTION C

6. Represent $\sqrt{26}$ on the number line

7. Factorise : $1 + a + b + c + ab + bc + ac + abc$

OR

Prove that : $a^3 + b^3 + c^3 - 3abc = \dfrac{1}{2}(a + b + c)\left[(a-b)^2 + (b-c)^2 + (c-a)^2\right]$

8. If $m = \dfrac{1}{7-4\sqrt{3}}$ and $n = \dfrac{1}{7+4\sqrt{3}}$, evaluate $mn(m + n)$

SECTION D

9. If $x^2 + \dfrac{1}{x^2} = 38$, find (i) $x - \dfrac{1}{x}$ (ii) $x^3 - \dfrac{1}{x^3}$

OR

If $f(x) = x^4 - 2x^3 + 3x^2 - ax + b$ is divided by $(x - 1)$ and $(x + 1)$, it leaves the remainder 5 and 19 respectively. Find the values of a and b.

****The End****