INDIAN SCHOOL MUSCAT

FIRST PERIODIC TEST

MATHEMATICS

CLASS: IX   Sub.Code : 041   Time Allotted: 50mts.

DATE:16.05.2023   Max .Marks: 20

GENERAL INSTRUCTIONS:

1. *This question paper contains four sections A, B, C and D. Each section is compulsory.*
2. *Section A has 3MCQ's and 1 Assertion-Reasoning question of 1 mark each.*
3. *Section B has 3 very short answer (VSA) type question of 2 mark each.*
4. *Section C has 2 short answer (SA) type question of 3 mark each.*
5. *Section D has 1 Source based/Case based question carrying 4 mark each.*

SECTION A

1. The value of $\sqrt{1^3 + 2^3 + 3^3}$ is   1

    (a) 6 (b) 8 (c) 5 (d) 7

2. The decimal expansion of $\frac{7}{40}$ is   1

    (a) non-terminating (b) terminating (c) repeating (d) non-repeating

3. If $a^{2x-1} = 1$; then the value of x is   1

    (a) 1 (b) $\frac{1}{2}$ (c) $\frac{1}{3}$ (d) $-\frac{1}{2}$

4. **Assertion:** 7 is rational number.   1

    Reason: The square root of all rational numbers is irrational.

    (a)Both Assertion and Reason are correct, and Reason is the correct explanation for Assertion.
    (b)Both Assertion and Reason are correct, and Reason is not the correct explanation for Assertion.
    (c)Assertion is true but the reason false.
    (d) both assertion and reason are false.

SECTION B

5. Find 5 rational numbers between 7 and 8. 2

6. Simplify $(\sqrt{5} + \sqrt{3})(\sqrt{6} + \sqrt{7})$ 2

7. Express $0.\overline{26}$ in the form of $\frac{p}{q}$ where p and q are integers and $q \neq 0$. 2

SECTION C

8. Represent $\sqrt{5}$ on the number line. 3

9. Find a and b if $\frac{4\sqrt{3}}{\sqrt{6}-\sqrt{2}} = a\sqrt{2} + b\sqrt{6}$ 3

SECTION D

10. On partition of ancestral property Ajay gave a rectangular plot to his son Arjun. The breadth of the plot is $(2\sqrt{3} + 3\sqrt{2})$ metre and the length of the plot is $(3\sqrt{3} + 2\sqrt{2})$ metre. 4

   (i) Length + breadth = _____ metre.
   (ii) Is $2\sqrt{3} + 3\sqrt{2}$ a rational number?
   (iii) Find the area of the plot.
        (OR)
   (iv) Find the perimeter of the plot.

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Section A

1. Find the value of $\frac{2^0+7^0}{5^0}$ 1

    (a) 2   (b) 0   (c) $\frac{9}{5}$ (d) $\frac{1}{5}$

2. Which of the following is irrational?   1
    (a)0.4014001400014...... (b) 0.14014 (c) $0.\overline{1416}$ (d) $0.14\overline{16}$

3. The value of $x + x(x^x)$ when $x = 2$ is   1

    (a)18 (b)10 (c)16 (d) 36

4. **Assertion:** Every integer is a rational number.   1
    Reason: Every integer is expressed in the form of, $\frac{m}{1}$ so it is a rational number.

    (a)Both Assertion and Reason are correct, and Reason is the correct explanation for
    Assertion.
    (b)Both Assertion and Reason are correct, and Reason is not the correct explanation for
    Assertion.
    (c)Assertion is true but the reason is false.
    (d) both assertion and reason are false.

Section B

5. Simplify: $\left(\sqrt{5} + \sqrt{3}\right)^2$ 2

6. Express $0.\overline{33}$ in the form of $\frac{p}{q}$, where p and q are integers and $q \neq 0$ 2

7. Find 5 rational numbers between $\frac{4}{7}$ *and* $\frac{5}{7}$.   2

Section C

8. If $\frac{5}{\sqrt{5}+\sqrt{3}} = a\sqrt{5} - b\sqrt{3}$,then find the values of a and b.   3

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

Section D

10. Arun and Varun went shopping to buy some books and pens. The cost of 1 book is Rs.$\left(\sqrt{3} + 4\sqrt{2}\right)$ and 1 pen is Rs.$\left(\sqrt{2} + 3\sqrt{3}\right)$. Arun bought $\sqrt{3}$ books and $\sqrt{2}$ pens. Varun bought $\sqrt{2}$ books and $\sqrt{3}$ pens.   4

(i) Is $2\sqrt{3} \times 2\sqrt{3}$ a rational number?

(ii) $\left(\sqrt{3} + 4\sqrt{2}\right) + \left(\sqrt{2} + 3\sqrt{3}\right)$ = _____

(iii) How much should Arun pay to the seller?

(OR)

(iv) How much should Varun pay to the seller?

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Section A

1. The product of $\sqrt{12}$ and $\sqrt{15}$ is equal to   1
   (a)$5\sqrt{6}$ (b)$6\sqrt{5}$ (c)$10\sqrt{5}$ (d) $\sqrt{25}$

2. The decimal expansion of a rational number is   1
   (a)always terminating (b)either terminating or repeating (c) either terminating or non-repeating   (d) neither terminating nor repeating

3. If m and n are 2 natural numbers and $m^n = 32$, then n^{mn} is   1
   (a)5^2 (b)5^3 (c)5^{10} (d)5^{12}

4. **Assertion:** 0.329 is a terminating decimal.   1
   Reason: A decimal in which a digit or a set of digits is repeated periodically, is called a repeating, or a recurring decimal.

   (a) Both Assertion and Reason are correct, and Reason is the correct explanation for Assertion
   (b) Both Assertion and Reason are correct but Reason is not the correct explanation for Assertion.
   (c) assertion is true but the reason is false.
   (d) both assertion and reason are false.

Section B

5. Find 5 rational numbers between $\frac{4}{3}$ and $\frac{5}{3}$.   2

6. Simplify: $(5 + \sqrt{5})(5 - \sqrt{5})$ 2

7. Express $0.\overline{41}$ in the form of $\frac{p}{q}$, where p and q are integers and $q \neq 0$.   2

Section C

8. Represent $\sqrt{5}$ on number line.   3

9. If $a = \sqrt{3} + \sqrt{2}$ then find $a + \frac{1}{a}$ and $a - \frac{1}{a}$.   3

Section D

10. On partition of ancestral property Ajay gave a rectangular plot to his son Arjun. The breadth of the plot is $(2\sqrt{3} + 3\sqrt{2})$ metre and the length of the plot is $(3\sqrt{3} + 2\sqrt{2})$ metre.   4

    (i)   Length + breadth = _____ metre.
    (ii)   Is $2\sqrt{3} + 3\sqrt{2}$ a rational number?
    (iii)   Find the area of the plot.
               (OR)
    (iv)   Find the perimeter of the plot.