



INDIAN SCHOOL MUSCAT

SECOND PERIODIC TEST

MATHEMATICS

CLASS: X

Sub. Code: 041

Time Allotted: 50mts

21.05.2023

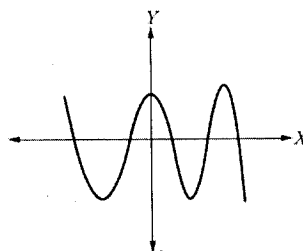
Max. Marks: 20

GENERAL INSTRUCTIONS:

- All questions are compulsory.
- Section A contains 4 questions of 1 mark each
- Section B contains 3 questions of 2 marks each
- Section C contains 2 questions of 3 marks each
- Section D contains a Case Study Based Question of 4 marks.

Section A – Multiple Choice Questions (1 mark each)

- The number of zeroes of the polynomial whose graph is shown in the figure is
 (a) 3 (b) 4 (c) 5 (d) more than 5 1
- If one zero of the polynomial $p(x) = 5x^2 + 13x - k$, is the reciprocal of the other, then
 (a) $k = 13$ (b) $k = 5$ (c) $k = -5$ (d) $k = -13$ 1
- The roots of the quadratic equation $2x^2 - x - 6 = 0$ are
 (a) $-2, \frac{3}{2}$ (b) $2, \frac{-3}{2}$ (c) $-2, \frac{-3}{2}$ (d) $2, \frac{3}{2}$ 1
- An Assertion (A) is given followed by a Reason (R). Mark your response from the given options. 1



Assertion: The equation $x^2 + 3x + 1 = (x - 2)^2$ is a quadratic equation.

Reason: Any equation of the form $ax^2 + bx + c = 0$ where $a \neq 0$, is called a quadratic equation.

- Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
- Assertion is true but Reason is false
- Assertion is false but Reason is true

Section B - Very Short Answer Questions (2 marks each)

5. Solve the quadratic equation: $\frac{16}{x} - 1 = \frac{15}{x+1}$ 2
6. Find the nature of the roots of the given quadratic equation: $\sqrt{2}x^2 - 4x + 3\sqrt{2} = 0$ 2
7. If one zero of the polynomial $5x^2 - 13x - k = 0$ is the reciprocal of the other, Find the value of k. 2

Section C - Short answer Questions (3 marks each)

8. Find the zeroes of the polynomial $x^2 - 3x - 10 = 0$ and verify the relationship between the zeroes and the coefficients. 3
9. The sum of the squares of two consecutive natural numbers is 421. Frame a mathematical equation for the given statement. 3

Section D - Case Based Questions (4 marks)

10. Renu has a lawn with a flowerbed and grassland. The grassland is in the shape of a rectangle while the flower bed is in the shape of a square. The length of the grassland is found to be 3 m more than twice the length of the flowerbed. Total area of the whole lawn is 1260 m^2 .



- (i) If the length of the flower bed is x m, then what is the total length of the lawn? 1
- (ii) What will be the perimeter of the lawn? 1
- (iii) What is the value of x ? 2

*****END OF THE QUESTION PAPER*****



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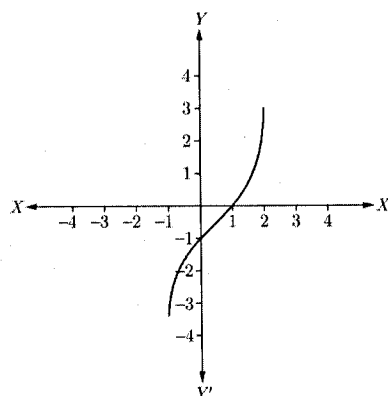
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GENERAL INSTRUCTIONS:

- All questions are compulsory.
- Section A contains 4 questions of 1 mark each
- Section B contains 3 questions of 2 marks each
- Section C contains 2 questions of 3 marks each
- Section D contains a Case Study Based Question of 4 marks.

Section A – Multiple Choice Questions (1 mark each)

- The number of zeroes of the polynomial whose graph is shown in the figure is
(a) 3 (b) 2 (c) 1 (d) more than 3



- If one zero of the polynomial $p(x) = 5x^2 + 13x - k$, is the reciprocal of the other, then

(a) $k = 13$ (b) $k = 5$ (c) $k = -5$ (d) $k = -13$

- The roots of the quadratic equation $2x^2 - x - 6 = 0$ are

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

- An Assertion (A) is given followed by a Reason (R). Mark your response from the given options.

Assertion: The equation $x^2 + 3x + 1 = (x - 2)^2$ is a quadratic equation.

Reason: Any equation of the form $ax^2 + bx + c = 0$ where $a \neq 0$, is called a quadratic equation.

- Both Assertion and Reason are true and Reason is the correct explanation of Assertion

- (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
 (c) Assertion is true but Reason is false
 (d) Assertion is false but Reason is true

Section B - Very Short Answer Questions (2 marks each)

5. Solve the quadratic equation: $\frac{16}{x} - 1 = \frac{15}{x+1}$ 2
6. Find the nature of the roots of the given quadratic equation: $\sqrt{2}x^2 + 7x + 5\sqrt{2} = 0$ 2
7. If one zero of the polynomial $5x^2 - 13x - k = 0$ is the reciprocal of the other, Find the value of k. 2

Section C - Short answer Questions (3 marks each)

8. Find the zeroes of the polynomial $x^2 - 3x - 10 = 0$ and verify the relationship between the zeroes and the coefficients. 3
9. The sum of the squares of two consecutive even numbers is 340. Frame a mathematical equation for the given statement. 3

Section D - Case Based Questions (4 marks)

10. Renu has a lawn with a flowerbed and grassland. The grassland is in the shape of a rectangle while the flower bed is in the shape of a square. The length of the grassland is found to be 3 m more than twice the length of the flowerbed. Total area of the whole lawn is 1260 m^2 .



- (i) If the length of the flower bed is x m, then what is the total length of the lawn? 1
- (ii) What will be the perimeter of the lawn? 1
- (iii) What is the value of x ? 2

*****END OF THE QUESTION PAPER******



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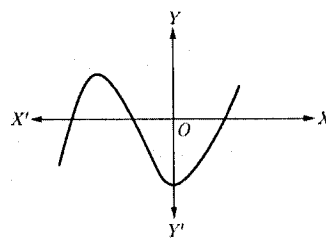
GENERAL INSTRUCTIONS:

- All questions are compulsory.
- Section A contains 4 questions of 1 mark each
- Section B contains 3 questions of 2 marks each
- Section C contains 2 questions of 3 marks each
- Section D contains a Case Study Based Question of 4 marks.

Section A – Multiple Choice Questions (1 mark each)

1. The number of zeroes of the polynomial whose graph is shown in the figure is

(a) 3 (b) 4 (c) 5 (d) more than 5



2. The roots of the quadratic equation $2x^2 - x - 6 = 0$ are

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

3. If one zero of the polynomial $p(x) = 5x^2 + 13x - k$, is the reciprocal of the other, then

(a) $k = 13$ (b) $k = 5$ (c) $k = -5$ (d) $k = -13$

4. An Assertion (A) is given followed by a Reason (R). Mark your response from the given options.

Assertion: The equation $x^2 + 3x + 1 = (x - 2)^2$ is a quadratic equation.

Reason: Any equation of the form $ax^2 + bx + c = 0$ where $a \neq 0$, is called a quadratic equation.

- Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
- Assertion is true but Reason is false
- Assertion is false but Reason is true

Section B – Very Short Answer Questions (2 marks each)

5. Solve the quadratic equation: $\frac{16}{x} - 1 = \frac{15}{x+1}$ 2
6. Find the nature of the roots of the given quadratic equation: $x^2 - 2\sqrt{3}x + 3 = 0$ 2
7. If one zero of the polynomial $5x^2 - 13x - k = 0$ is the reciprocal of the other, Find the value of k. 2

Section C – Short answer Questions (3 marks each)

8. Find the zeroes of the polynomial $x^2 - 3x - 10 = 0$ and verify the relationship between the zeroes and the coefficients. 3
9. The sum of the squares of two consecutive odd numbers is 394. Frame a mathematical equation for the given statement. 3

Section D – Case Based Questions (4 marks)

10. Renu has a lawn with a flowerbed and grassland. The grassland is in the shape of a rectangle while the flower bed is in the shape of a square. The length of the grassland is found to be 3 m more than twice the length of the flowerbed. Total area of the whole lawn is 1260 m^2 .



- (i) If the length of the flower bed is x m, then what is the total length of the lawn? 1
- (ii) What will be the perimeter of the lawn? 1
- (iii) What is the value of x ? 2

*****END OF THE MARKING SCHEME*****