SET A

INDIAN SCHOOL MUSCAT

SECOND PERIODIC TEST

MATHEMATICS

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

20.11.2023 Max .Marks: 20

Roll no..... Name of the Student..... sec.....

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. If the area of an equilateral triangle is $16\sqrt{3}$ cm^2, then find the perimeter of the triangle. 1
   (a) 48 cm (b) 12 cm (c) 24 cm (d) 36 cm

2. The degree of a non-zero constant polynomial is ----------. 1
   (a) one (b) zero (c) two (d) not defined

3. The value of the polynomial $5x^3 + 3x + 1$ at $x = -2$ 1
   (a) 45 (b) 7 (c) - 45 (d) - 7

4. **Assertion:** If $(x + 1)$ is a factor of $p(x) = x^2 + ax + 2$ then a = - 3. 1
   Reason: If $(x - a)$ is a factor of $p(x)$, then p(a) = 0.

   (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. Factorise : $x^3 + 13x^2 + 32x + 20$ 2

6. Evaluate $(104)^3$using suitable identity. 2

7. Find the area of a triangle, two sides of which are 8 cm and 11 cm and the perimeter is 32 cm. 2

SECTION C

8. If $3x + 2y = 12$ *and* $xy = 6$ compute the value of $9x^2 + 4y^2$ 3

9. The sides of a triangular plot are in the ratio of 3 : 5 : 7 and its perimeter is 300 m . Find its area. 3

SECTION D

10. Ankur and Ranjan started a new business together. The amount invested by both partners together is given by the polynomial $p(x) = 4x^2 + 12x + 5$, which is the product of their individual shares. 4

(i) Coefficient of x^2 in the given polynomial is ---------- .
(ii) Name the polynomial of amounts invested by each partner.
(iii) What are the shares of Ankur and Ranjan invested individually?

(or)

(iii) What is the total amount invested by both, if x = 1000?

END OF THE QUESTION PAPER

SET B

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SECTION A

1. The value of the polynomial $5x^3 + 3x + 1$ at $x = -1$ 1
   (a) 45 (b) 7 (c) - 45 (d) - 7

2. The degree of a zero polynomial is ----------. 1
   (a) one (b) zero (c) two (d) not defined

3. If the area of an equilateral triangle is $16\sqrt{3}$ cm^2, then find the perimeter of the triangle. 1
   (a) 48 cm (b) 12 cm (c) 24 cm (d) 36 cm

4. **Assertion:** If $(x + 1)$ is a factor of $p(x) = x^2 + ax + 2$ then a = - 3. 1
   Reason: If $(x - a)$ is a factor of $p(x)$, then p(a) = 0.

   (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. Find the area of a triangle, two sides of which are 8 cm and 11 cm and the perimeter is 32 cm. 2

6. Evaluate $(105)^3$ using suitable identity. 2

7. Factorise : $x^3 + 13x^2 + 32x + 20$ 2

SECTION C

8. The sides of a triangular plot are in the ratio of 3 : 5 : 7 and its perimeter is 300 m. Find its area. 3

9. If $3x - 2y = 12$ *and* $xy = 6$ compute the value of $9x^2 + 4y^2$ 3

SECTION D

10. Ankur and Ranjan started a new business together. The amount invested by both partners together is given by the polynomial $p(x) = 4x^2 + 12x + 5$, which is the product of their individual shares. 4

(i) Coefficient of x^2 in the given polynomial is ---------- .

(ii) Name the polynomial of amounts invested by both partners.

(iii) What are the shares of Ankur and Ranjan invested individually?

(or)

(iii) What is the total amount invested by both, if x = 1000?

END OF THE QUESTION PAPER

a

SET C

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SECTION A

1. If the area of an equilateral triangle is $16\sqrt{3}$ cm^2, then find the semi-perimeter of the triangle. 1
   (a) 48 cm (b) 12 cm (c) 24 cm (d) 36 cm

2. The degree of a non-zero constant polynomial is ----------. 1
   (a) one (b) zero (c) two (d) not defined

3. The value of the polynomial $5x^2 + 3x + 1$ at $x = -2$ 1
   (a) 15 (b) 7 (c) – 15 (d) – 7

4. **Assertion:** If $(x + 1)$ is a factor of $p(x) = x^2 + ax + 2$ then a = – 3. 1
   Reason: If $(x - a)$ is a factor of $p(x)$, then p(a) = 0.

   (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. Factorise : $x^3 - 23x^2 + 142x - 120$

6. Evaluate $(104)^3$ using suitable identity.

7. Find the area of a triangle, two sides of which are 8 cm and 11 cm and the perimeter is 32 cm.

SECTION C

8. If $3x + 2y = 12$ *and* $xy = -6$ compute the value of $9x^2 + 4y^2$

9. The sides of a triangular plot are in the ratio of 3 : 5 : 7 and its perimeter is 300 m. Find its area.

SECTION D

10. Ankur and Ranjan start a new business together. The amount invested by both partners together is given by the polynomial $p(x) = 4x^2 + 12x + 5$, which is the product of their individual shares.

    (i) Coefficient of x^2 in the given polynomial is ---------- .
    (ii) Name the polynomial of amounts invested by each partner.
    (iii) What are the shares of Ankur and Ranjan invested individually?

    (or)

    (iv) What is the total amount invested by both, if x = 1000?

END OF THE QUESTION PAPER