ROLL NUMBER					

SET	A

INDIAN SCHOOL MUSCAT
SECOND PERIODIC TEST 2022
MATHEMATICS (041)

CLASS : IX
DATE: 18.12.2022

TIME ALLOTED : 50 MINS.
MAXIMUM MARKS: 20

GENERAL INSTRUCTIONS:

(i) *All questions are compulsory.*
(ii) *Section A contains 4 questions of 1 mark each*
(iii) *Section B contains 3 questions of 2 marks each*
(iv) *Section C contains 2 questions of 3 marks each*
(v) *Section D contains a Case Study Based Question of 4 marks.*

Section A – Multiple Choice Questions (1 mark each)

1.	Zeroes of the polynomial $p(x) = (x-1)(x+2)$ (a) 1, 2 (b) 1, -2 (c) -1, 2 (d) -1, -2	1
2.	A polynomial of degree 5 in x has at most (a) 5 terms (b) 3 terms (c) 6 terms (d) 4 terms	1
3.	$\frac{8.83\times8.83-2.17\times2.17}{6.66}$ in its simplified form is equal to (a) 9 (b) 10 (c) 11 (d) 12	1
4.	An Assertion (A) is given followed by a Reason (R). Mark your response from the given options. **Assertion:** If $f(x) = x^4 + x^3 - 2x^2 + x + 1$ is divided by $x - 1$, then its remainder is 2. **Reason:** If p(x) is a polynomial of degree greater than or equal to one, divided by the linear polynomial $x - a$, then the remainder is p(-a). (a) 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	1

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

5.	Without actually calculating the cubes, evaluate $(25)^3 + (-17)^3 + (-8)^3$	2
6.	Find the value of $p^3 - q^3$ *if* $p - q = -8, pq = -12$	2
7.	Factorize using suitable identities: $27y^3 + 125x^3$	2

Section C – Short answer Questions (3 marks each)

8.	Expand using suitable identities: (i) $(4x - 2y - 3z)^2$ (ii) $(3x^2 + y)^3$	3
9.	Factorize: $x^3 + 13x^2 + 32x + 20$	3

Section D – Case Based Questions (4 marks)

10.	Two students Annie and Metilda started a business together. They decided to share their capitals depending upon the variable x. The capital of the two partners together is given by the polynomial $6x^2 + 11x - 35$, which is the product of their individual share factors. On the basis of the above information, answer the following questions. (i) Name the polynomial given based on the number of terms. (ii) Find the individual shares of Annie and Metilda in terms of x. (iii) What is the value of x when the individual shares of Annie and Metilda are equal?	 1 1 2

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

ROLL NUMBER				

SET	B

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(iii) Section B contains 3 questions of 2 marks each
(iv) Section C contains 2 questions of 3 marks each
(v) Section D contains a Case Study Based Question of 4 marks.

Section A – Multiple Choice Questions (1 mark each)

1.	A polynomial of degree 4 in x has at most (a) 5 terms (b) 3 terms (c) 6 terms (d) 4 terms	1
2.	Zeroes of the polynomial $p(x) = (x-1)(x+2)$ (a) 1, 2 (b) 1, -2 (c) -1, 2 (d) -1, -2	1
3.	$\frac{8.83\times8.83-2.17\times2.17}{6.66}$ in its simplified form is equal to (a) 9 (b) 10 (c) 11 (d) 12	1
4.	An Assertion (A) is given followed by a Reason (R). Mark your response from the given options. **Assertion:** If $f(x) = x^4 + x^3 - 2x^2 + x + 1$ is divided by $x - 1$, then its remainder is 0. **Reason:** If p(x) is a polynomial of degree greater than or equal to one, divided by the linear polynomial $x - a$, then the remainder is p(a). (a) 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	1

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

5.	Without actually calculating the cubes, evaluate $(-12)^3 + (7)^3 + (5)^3$	2
6.	Find the value of $p^3 - q^3$ *if* $p - q = -8, pq = -12$	2
7.	Factorize using suitable identities: $64y^3 + 343x^3$	2

Section C – Short answer Questions (3 marks each)

8.	Expand using suitable identities: (i) $(4x - 2y - 3z)^2$ (ii) $(3x^2 - y)^3$	3
9.	Factorize: $x^3 + 13x^2 + 32x + 20$	3

Section D – Case Based Questions (4 marks)

10.	Two students Annie and Metilda started a business together. They decided to share their capitals depending upon the variable x. The capital of the two partners together is given by the polynomial $6x^2 + 11x - 35$, which is the product of their individual share factors. On the basis of the above information, answer the following questions. (i) Name the polynomial given based on the number of terms. (ii) Find the individual shares of Annie and Metilda in terms of x. (iii) What is the value of x when the individual shares of Annie and Metilda are equal?	 1 1 2

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(iv) *Section C contains 2 questions of 3 marks each*
(v) *Section D contains a Case Study Based Question of 4 marks.*

Section A – Multiple Choice Questions (1 mark each)

1.	Zeroes of the polynomial $p(x) = (x+1)(x+2)$ (a) 1, 2 (b) 1, -2 (c) -1, 2 (d) -1, -2	1
2.	$\frac{8.83\times8.83-2.17\times2.17}{6.66}$ in its simplified form is equal to (a) 9 (b) 10 (c) 11 (d) 12	1
3.	A polynomial of degree 3 in x has at most (a) 5 terms (b) 3 terms (c) 6 terms (d) 4 terms	1
4.	An Assertion (A) is given followed by a Reason (R). Mark your response from the given options. **Assertion:** If $f(x) = x^4 + x^3 - 2x^2 + x + 1$ is divided by $x - 1$, then its remainder is 0. **Reason:** If p(x) is a polynomial of degree greater than or equal to one, divided by the linear polynomial $x - a$, then the remainder is p(a). (a) 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	1

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

5.	Without actually calculating the cubes, evaluate $(55)^3 + (-25)^3 + (-30)^3$	2
6.	Find the value of $p^3 - q^3$ *if* $p - q = -8, pq = -12$	2
7.	Factorize using suitable identities: $27y^3 - 64x^3$	2

Section C – Short answer Questions (3 marks each)

8.	Factorize: $x^3 + 13x^2 + 32x + 20$	3
9.	Expand using suitable identities: (i) $(4x - 2y - 3z)^2$ (ii) $(3x^2 + y)^3$	3

Section D – Case Based Questions (4 marks)

10.	Two students Annie and Metilda started a business together. They decided to share their capitals depending upon the variable x. The capital of the two partners together is given by the polynomial $6x^2 + 11x - 35$, which is the product of their individual share factors. On the basis of the above information, answer the following questions. (i) Name the polynomial given based on the number of terms. (ii) Find the individual shares of Annie and Metilda in terms of x. (iii) What is the value of x when the individual shares of Annie and Metilda are equal?	 1 1 2

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