Oxford International School

Mid-Year Examination 2022-23

IX

Name																				

(In Block Letters)

Date: _____ Subject: - Math's Time: 2.5 Hours T. Marks: 75

Index No				

Instructions

Put your Name and Date at given place.

Read the paper thoroughly and answer those questions first for which you are sure about the answers.

Every question is with different instructions. Focus & Follow it.

Don't need to write all the questions. You can put the Question no. put it correctly.

Re check the paper/ answer script after completion.

========== don't write under this line ==========

Question No	Section A	Section B	Section c	T.MARKS
Total .No	15	36	24	75
Marks obtained				

Invigilated By _____ Invigilator's Sign _____

Checked By _____ Checker's Sign _____

Re Checked By _____ Re Checker's Sign _____

Section "A" Objectives (MCQS) Marks 15

1. **(5i).(-2i) =**

a) -10 b) 10 c) -10i d) 10i

2. $\sqrt{-2}$ **x** $\sqrt{-2}$ **=**

a) 2 b) -2 c) 2i d) none

3. π is a _____ number:

a) Irrational b) rational c) 10 d) none

4. Logarithm having base 10 is called _____

a) Common logarithm b) non common c) both a and b d) none

5. The characteristics of log 54.58 is _____

a) 0 b) 1 c) 2 d) 4

6. if log 10^x = 4, then x = _____

a) 500 b) 10000 c) 1000 d) 100

7. Base in the Natural logarithm is _____

a) 10 b) e c) 22/7 d) none

8. Algebraic expression are _____ types.

a) One b) two c) three d) none

9. A polynomial consisting of four or more terms is called _____

a) Monomial b) Binomial c) Trinomial d) Multinomial

10. A polynomial consisting three terms is called _____

a) Monomial b) Trinomial c) Multinomial d) none

11. A surd which contains sum of two monomial surd is called:

a) Trinomial surd b) Binomial surd c) both a and b d)none

12. There Cartesian coordinate system consist of _____ real number lines:

a) 1 b) 2 c) both a and b d) 3

13. In Cartesian coordinate system, the horizontal number line is called _____

a) x-axis b) y-axis c) origin d) none

14. The x-axis and y-axis divide the Cartesian plane into _____ quadrants.

a) 4 b) 5 c) {2,3) d)none

15. P (-3,-4) lie in the quadrant _____

a) I b) III c) V d) II

Subjective Marks 60

Section "B"

Q 2: Attempt and Nine (06) questions. All question carry equal marks (30)

1. **Simplify and write your answer in form of a+ib**
   a. $(1+i)^2$ b. $(1+i)^4$

2. Find the value of x and y, when, x+yi = -5 +5i

3. Express the following logarithm in terms of $\log_a \frac{x^3 y}{z^2}$

4. Find the value of $125x^3 + y^3$ when 5x + y = 13

5. Find the value of $x^3 + \frac{1}{x^3}$, when $x + \frac{1}{x} = 7$

6. Simplify

a. $\sqrt[4]{81x^{-8}z^4}$ b. $\sqrt[7]{128}$

7. Factorize the following. $7x + xz + 7z + z^2$

8. Factorize $4a^2 - 9b^2$

9. Factorize the following. $(x^2 - 4x - 5)(x^2 - 4x - 12) - 144$

10. Find the factors of: $d^3 - 6d^2c + 12dc^2 - 8c^3$

11. factorize the following, $x^3 + 8y^3$

12. Find the factors of. $X^3 - 8y^3$

13. Find the remainder by using the remainder theorem when

$x^3 - 6x^2 + 11x - 8$ is divided by (x-1)

14. Find the square root of the following algebraic expression by factorization method.

$36x^2 - 60xy + 25y^2$

Section "C"

Q3: Attempt and Three (03) questions. All question carry equal marks. (30)

1. **Rationalize the denominator the following.**

   a. **If x = 8 – 3 $\sqrt{7}$, find (x + $\frac{1}{x}$)^2**

2. **Find the values of the following by using logarithms.**

   a. $25.753 \times 0.5341 \times 490.8$

3. **Find the factors of.**

   a. **$x^9 - 8y^9$** b. **$x^{12} - y^{12}$**

4. **What should be added to $4x^4 + 4x^3 + 17x^2 + 8x + 9$ make it perfect square?**

5. **Solve the following simultaneous equations by graphical method.**

   a. **$3x - 11 = y$; $x - 3y = 9$**