INDIAN SCHOOL NIZWA-WORKSHEET

	MATHEMATICS	
	CH - 1 PATTERNS IN MATHEMATICS	
Name:_____	**Date:_____**	**Class: VI Sec:__**

MULTIPLE CHOICE QUESTIONS:

1. What is the primary focus of mathematics according to the chapter-1?
   a) Solving equations
   b) Finding patterns and their explanations
   c) Memorizing formulas
   d) Learning history of mathematics
2. Which branch of mathematics studies patterns in whole numbers?
   a) Algebra
   b) Geometry
   c) Number theory
   d) Calculus
3. What type of numbers does the sequence 1, 3, 5, 7, …. Represent?
   a) Even numbers
   b) Odd numbers
   c) Prime numbers
   d) Square numbers
4. Which number sequence is formed by adding consecutive odd numbers?
   a) Triangular numbers
   b) Square numbers
   c) Cubes
   d) Powers of 2
5. What is the next number in the sequence of triangular numbers: 1, 3, 6, 10, …?
   a) 15 b) 14 c) 16 d) 12
6. Which shape is associated with the sequence of regular polygons?
   a) Rectangle b) Ellipse c) Triangle d) Circle
7. What does the term powers of 2 refers to in mathematics?
   a) Numbers that can be divided by 2
   b) Sequences like 1, 2, 4, 8, …
   c) Prime numbers greater than 2
   d) The sum of two even numbers

8. How many sides does a hexagon have?

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

9. What is a characteristic of square numbers?

   a) They are always odd

   b) They are always prime

   c) They can be visualized as dots in a square grid

   d) They cannot be represented pictorially

10. In the context of number sequences, what does visualization help with?

   a) Memorizing sequences

   b) Understanding relationships between sequences

   c) Complicating mathematical concepts

   d) None of the above

11. Which of the following numbers can be represented as a triangular and a square shape?

   a) 15 b) 21 c) 36 d) 49

12. The sum of two consecutive triangular numbers is:

   a) Square number

   b) Cube number

   c) Hexagonal number

   d) Virahanka number

13. The sum of first 11 consecutive odd numbers is:

   a) 22 b) 33 c) 77 d) 121

14. What shape is added to each side of the Koch snowflake in every iteration?

   a) Circle b) square c) triangle d) hexagon

15. What is the formula for calculating the number of edges in a complete graph with 'n' vertices?

   a) n(n+1) b) n^2 c) $\frac{n(n-1)}{2}$ d) 2^n

16. **Assertion**: 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 = 100

   Reason: By adding up 'n' consecutive odd numbers, we get square of number 'n'.

   In the given question, a statement of Assertion is followed by a statement of Reason.

   Choose the correct option as:

   a) Both assertion and reason are true and reason is the correct explanation of assertion.

   b) Both assertion and reason are true but the reason is not the correct explanation of the assertion.

   c) Assertion is true and the reason is false.

   d) Assertion is false and the reason is true.