CHAPTER-1 | Patterns in Mathematics

QUIZ PART-12

1. **What type of sequence is represented by regular polygons?**
   A. Triangular numbers
   B. Square numbers
   C. Polygonal sequence
   D. Cube numbers (C)

Explanation : Regular polygons follow a polygonal sequence, where the number of sides increases progressively.

2. **The sequence of regular polygons starts with which shape?**
   A. Square
   B. Triangle
   C. Hexagon
   D. Pentagon (B)

Explanation: The sequence starts with a triangle, followed by quadrilaterals, pentagons, and so on.

3. **The number of vertices in a complete graph is represented by:**
   A. Triangular numbers
   B. K2, K3, K4
   C. Cube numbers
   D. Square numbers (B)

Explanation: Complete graphs are denoted by Kn, where "n" is the number of vertices, such as K2, K3, K4.

4. **The sequence of stacked squares starts with:**
   A. A small square
   B. An equilateral triangle
   C. A rectangle
   D. A large square (A)

Explanation: The stacked square pattern starts with a small square and progressively increases in size.

5. **What happens in a stacked triangle pattern?**
   A. Smaller triangles are stacked on top
   B. Larger triangles are stacked on each other
   C. Only one triangle is used
   D. Triangles are arranged in a straight line (A)

Explanation : Smaller triangles are stacked on top of each other to create a growing triangular shape.

6. **The Koch snowflake is an example of a:**
   A. Square pattern
   B. Fractal pattern
   C. Regular polygon
   D. Triangular pattern (B)

Explanation : The Koch snowflake is a fractal pattern formed by adding smaller triangles to each side.

7. **In the stacked square pattern, each new square has how many sides?**
   A. 3
   B. 4
   C. 6
   D. 5 (B)

Explanation : Each square in the stacked square pattern has 4 sides, progressively getting larger.

8. **What is the rule for forming shapes in the stacked triangle sequence?**
   A. Add squares to the bottom
   B. Add triangles in a growing arrangement
   C. Increase the side length of squares
   D. Add cubes on top (B)

Explanation : In stacked triangles, each new layer consists of more triangles arranged to form a larger shape.

9. **What is the shape of the Koch snowflake after one iteration?**
   A. Square
   B. Hexagon
   C. Triangle
   D. Pentagon (B)

Explanation : After the first iteration, the Koch snowflake starts with a hexagon and adds smaller triangles to each side.

10. **Which of the following is an example of a regular polygon sequence?**
    A. 1, 3, 6, 10
    B. 1, 2, 3, 4
    C. Triangle, Square, Pentagon
    D. 1, 4, 9, 16 (C)

Explanation : A regular polygon sequence begins with a triangle, followed by square, pentagon, and so on.