INTRODUCTION TO EUCLID'S GEOMETRY

➢ IMPORTANT POINTS

- A solid has shape, size, position and can be moved from one place to another, its boundaries are called surfaces.
- The boundaries of the surfaces are curves or straight line and these lines end in points.
- A point is that which has no part.
- A line is breadthless length.
- The ends of a line are points
- A straight line is a line which lies evently with the points on itself.
- A surface is that which has length and breadth only. The edges of a surface are lines.
- A plane surface is a surface which lies evently with the straight lines on itself.
- The assumptions that were specific to geometry are called 'postulate'.
- Common notion, often called 'axioms', were assumptions used throughout mathematics and not specifically linked to geometry.
- **Euclid's five Postulates**
  - (i) **Postulate 1 :** A straight line may be drawn from any one point to any other point
  - (ii) **Postulate 2 :** A terminated line canbe produced indefinitely.
  - (iii) **Postulate 3 :** A circle can be drawn with any centre and any radius.
  - (iv) **Postulate 4 :** All right angles are equal to one another
  - (v) **Postulate 5 :** If a straight line falling on two straight lines makes the interior angles on the same side of it taken together less than two right angles, then the two straight lines, if produced indefinitely, meet on that side on which the sum of angles is less than two right angles.
- An equilateral triangle can be constructed on any given line segment
- Two distinct lines cannot have more than one point in common.
- Two distinct intersecting lines cannot be parallel to the same line.