

## Chapter –10

### Practical Geometry

In this Chapter, we looked into the methods of some ruler and compasses constructions.

- Given a line  $l$  and a point not on it, we used the idea of 'equal alternate angles' in a transversal diagram to draw a line parallel to  $l$ .

We could also have used the idea of 'equal corresponding angles' to do the construction.

- **Construction of Parallel Lines:** Draw a line segment  $l$  and mark a point  $A$  not lying on it.
- Take any point  $B$  on  $l$  and join  $B$  to  $A$ .
- With  $B$  as centre and convenient radius, draw an arc cutting  $l$  at  $C$  and  $AB$  at  $D$ .
- Now with  $A$  as centre and the same radius as in above step draw an arc  $EF$  cutting  $AB$  at  $G$ .
- Place the metal point of the compasses at  $C$  and adjust the opening so that the pencil point is at  $D$ .
- With the same opening as in above step and with  $G$  as centre draw another arc cutting the arc  $EF$  at  $H$ .
- Now join  $AH$  and draw a line  $m$ .
- We studied the method of drawing a triangle, using indirectly the concept of congruence of triangles.

The following cases were discussed:

- (i) SSS: Given the three side lengths of a triangle.
- (ii) SAS: Given the lengths of any two sides and the measure of the angle between these sides.
- (iii) ASA: Given the measures of two angles and the length of side included between them.
- (iv) RHS: Given the length of hypotenuse of a right-angled triangle and the length of one of its legs.