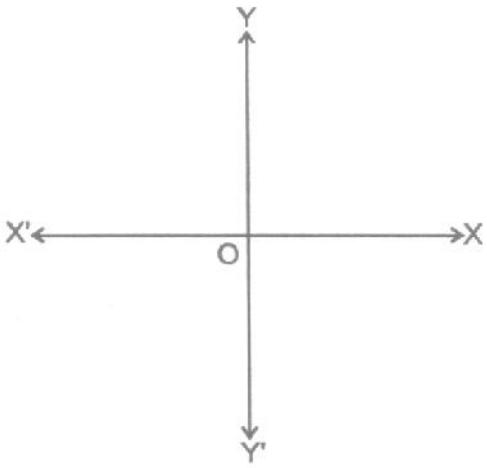
CHAPTER – 7
CO-ORDINATE GEOMETRY

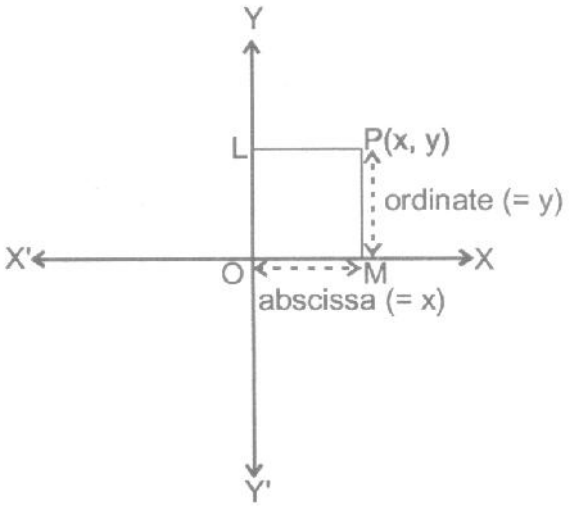
7.1 INTRODUCTION

Take two perpendicular lines **X′OX** and **Y′OY** intersecting at the point **O. X′OX** and **Y′OY** are called the co-ordinate axes. **X′Ox** is called the **X-axis, Y′OY** is called the **Y-axis** and **O** is called the origin. Lines **X′OX** and **Y′OY** are sometimes also called rectangular axes.



Co-ordinates of a Point:

Let **P** be any point as shown in figure. Draw **PL** and **PM** perpendiculars on **Y-axis** and **X-axis,** respectively. The length **LP (or OM)** is called the **x - coordinate of the abscissa of point P** and **MP** i called the **y - coordinate or the ordinate of point P.** A point whose abscissa is **x** and ordinate is **y** named as the point **(x,y) or P(x,y).**



The two liens **X'OX** and **Y'OY** divide the plane into four parts called **quadrants. XOY, YOX' X'OY'** and **Y'OX** are, respectively, called the first, second third and fourth quadrants. The following table shows the signs of the coordinates of pins situated in different quadrants :

Quadrant	X-coodrinate	Y-coordinate	Point
First quadrant	+	+	(+, +)
Second quadrant	-	+	(-, +)
Third quadrant	-	-	(-, -)
Fourth quadrant	+	-	(+, -)

REMAKS

(i) Abscissa is the perpendicular distance of a point from **y-axis** (i.e., positive to the right of **y-axis** and negative to the left of **y - axis)**

(ii) **Ordinate** is positive above **x - axis** and negative below **x-axis.**

(iii) **Abscissa** of any point on **y-axis** is zero.

(iv) **Ordinate** of any point of **x-axis** is zero.

(v) Co-ordinates of the **origin** are (0,0)