Chapter Five

1. Define Optimal solution.(2014,2017,2018)
"The feasible solution which maximizes or minimizes the objective function is called optimal solution"

2. Define Decision variable.(2017)

"The variables used in the system of linear inequalities relating to the problem of everyday life are non-negative are called decision variable".

3. If a non-vertical line divides a plane into two, then write the name those two planes?(2019)

"Upper half plane and lower half plane"

4. Graph the inequality x+3y > 6. (2019)

5. Graph $x + y \leq 5 \quad , -2x + y \leq 2 \quad , y \geq 0$.(2016) (E.x#5.2 Q1 ii)

6. Find the corner points $5x + 7y \leq 35 \quad , x - 2y \leq 4 \ , y \geq 0 \quad , x \geq 0$.(2016) (E.x#5.2 Q1 vi)

7. Indicate the solution set of the system of linear inequality
$x + y \geq 5 \quad , -y + x \leq 1$ (2017) (E.x#5.1 Q2 ii)

8. Graph the region indicated $4x - 3y \leq 12 \ , x \geq -\frac{3}{2}$ (2018) (E.x#5.1 Q2 iv)

9. Define problem constraints(2015)
"The systems of linear inequalities involved in the problem concerned are called problem constrains".

10. Define corner points.(2014)
"Those point of solution region of inequalities where they intersect each other are called corner point"

11. Define Feasible region.(2014,2018)
"The region restricted to 1^{st} Quadrant is called feasible region"

12. Define Feasible solution set.(2010,2013)
"The region restricted to 1^{st} Quadrant is called feasible region and solution is called feasible solution"

13. Define convex region.(2012)
"If the line segment obtained by joining any two point of a region lies entirely within the region is called a convex region"

Long Question

1. Graph the feasible region subject to the following constraints.
   $2x+3y \le 6 \;\; , 2x+y \le 2 \;\; , y \ge 0 \;\; , x \ge 0$ (2013,2014,2017) (Example 3 pg 241)
2. Graph the feasible region and find the corner points of linear inequality.
   $2x-3y \le 6 \;\; , 2x+3y \le 12 \;\; , y \ge 0 \;\; , x \ge 0$ (2015 G-I) (E.x#5.2 Q1 i)

3. Graph the feasible region and find the corner points of linear inequality.
   $x+y \le 5 \;\; , -2x+y \ge 2 \;\; , x \ge 0$ (2015 G-II,2019) (E.x#5.2 Q1 iii)
4. Maximize f (x,y) = x+3y subject to the constrains.
   $2x+5y \le 30 \;\; , 5x+4y \le 20 \;\; , x \ge 0 \;\; , y \ge 0$, (2016,2017) (E.x#5.3 Q2)
5. Maximize f (x,y) = 2x+y subject to the constrains.
   $x+y \ge 3 \;\; , 5y+7x \le 35 \;\; x \ge 0 \;\; , y \ge 0$, (2014,2018)(E.x#5.3 Q4)
6. Maximize f (x,y) = 2x+3y subject to the constrains.
   $2x+y \le 8 \;\; , x+2y \le 14 \;\; , x \ge 0 \;\; , y \ge 0$, (2016)(E.x#5.3 Q5)
7. Graph the feasible region and find the corner points of linear inequality.
   $2x+3y \le 18 \;\; , x+4y \le 12 \;\; 3x+y \le 12, x \ge 0 \;\; , y \ge 0$, (2018) (E.x#5.2 Q2 iii)