Chapter

5

LINEAR INEQUALITIES & LINEAR PROGRAMMING

OBJECTIVE

(1) The solution of $ax + by \leq c$ is _____. ***(Lahore Board 2006) (Lahore Board 2013)***

(a) closed half plane (b) open half plane

(c) circle (d) parabola

(2) The function, which is to be maximized or minimized is called _____ function.

(a) bijective (b) objective

(c) feasible (d) none

(3) There are _____ many feasible solutions in the feasible region.

(a) infinite (b) finite

(c) some (d) none

(4) $x = 4$ is solution of _____ ***(Lahore Board 2014)***

(a) $x + 3 > 0$ (b) $x - 3 < 0$

(c) $x + 3 = 0$ (d) $x - 3 = 0$

(5) A point of a solution region where two of its boundary lines intersect is called a _____ point or vertex.

(a) solution point (b) stationary

(c) inflection (d) corner

(6) $x = 5$ is solution of inequality ***(Gujranwala Board 2006)***

(a) $2x - 3 > 0$ (b) $2x + 3 < 0$

(c) $x + 4 < 0$ (d) $x < 0$

(7) Associated equation of the linear inequality $ax + by < c$ is _____

(a) $ax = c$ (b) $ax - by = 0$

(c) $ax + by = c$ (d) none

(8) (1, 3) is a solution of _____ ***(Lahore Board 2007, 2014)***

(a) $x + y > 0$ (b) $x + y < 0$

(c) $x + y = 2$ (d) $x - y = 0$

(9) The solution set of inequality $ax + by = c$ is _____

(a) half solution (b) XY plane

(c) open plane (d) boundary of half plane

(10) All points with $x > 0$, $y > 0$ lie in _____ quadrant.

(a) I (b) II

(c) III (d) IV

(11) Each point of a feasible region is called a _____

(a) feasible solution set (b) feasible solution

(c) corner point (d) none

(12) $ax + by < C$ is linear inequality in _____ variables.

(a) One (b) Two

(c) Three (d) Four

(13) A point of a solution region where two of its boundary lines intersect, is called a _____.

(a) optimal solution (b) vertex

(c) feasible solution (d) None

(14) $2x + 3y < 0$ is _____ ***(Gujranwala Board 2007)***

(a) an equation (b) inequality

(c) identity (d) not identity

(15) The graph of $3x + 2y > 3$ is _____.

(a) closed half plane (b) line only

(c) open half plane (d) full plane

(16) General form of equation of line is _____

(a) $ax - by + c = 0$ (b) $ax + by - c - 0$

(c) $ax + by + c = 0$ (d) $ax - by - c = 0$

(17) A vertical line divides a plane into _____

(a) upper & lower half plane (b) upper & right half planes

(c) left & right half plane (d) left & lower half planes

(18) The linear inequalities associated with an objective function are called _____

(a) decision variables (b) problem constraints

(c) feasible region (d) none

(19) In linear programming, the maximum & minimum value of an objective function occurs at _____

(a) corner points (b) one of the corner point

(c) corner point of feasible region (d) none of these

(20) A feasible region is restricted in _____ quadrant. ***(Gujranwala Board 2011)***

(a) I (b) II

(c) III (d) IV

(21) The feasible solution, which maximize or minimize _____ the objective function is called _____ ***(Gujranwala Board 2008, Lahore Board 2010)***

(a) feasible region (b) optional value

(c) corner point (d) solution

(22) Convex region may be _____

(a) open (b) bounded

(c) closed (d) all are true

(23) (0, 0) is test point of _____

(a) $y \leq mx$ (b) $y \geq mx$

(c) $2x - y \geq 0$ (d) none of the

(24) The internal $(-\infty, \frac{3}{2})$ is the solution set of _____

(a) $-\infty < x < \frac{3}{2}$ (b) $-\infty < y < \frac{3}{2}$

(c) $x < \frac{3}{2}$ (d) none

(25) The graph of $y > 0$ consists of the region $y > 0$ and

(a) x – axis (b) y – axis

(c) xy-plane (d) none

(26) Which one is not corner point of $x - 2y \leq 6$, $2x + y \geq 2$ and $x + 2y \leq 10$

(a) $(2, -2)$ (b) $(8, 1)$

(c) $(-2, 6)$ (d) $(0, -5)$

(27) To find the optimal solution, we evaluate the objective function at _____

(a) corner points (b) only origin

(c) any point (d) all points of feasible region

(28) A test point determines that the half plane is on which side of _____

(a) x-axis (b) y-axis

(c) Boundary line (d) none of these

(29) The corresponding equation of $x - 2y \leq 6$ intersects y-axis at _____

(a) $(0, 3)$ (b) $(0, -3)$

(c) $(6, 0)$ (d) $(0, 6)$

(30) Graph of $-3x + 5y \leq 0$ _____

(a) on the origin side (b) left half plane

(c) right half plane (d) none

(31) The inequality $ax + by \leq = c$ _____, when $a = 0$ represents _____ half plane. ***(Lahore Board 2012)***

(a) Left or right (b) Upper or Lower

(c) Open (d) None

(32) Solution of inequality $x + 2y < 6$ is ***(Lahore Board 2012)***

(a) $(1, 1)$ (b) $(1, 3)$

(c) $(1, 4)$ (d) $(1, 5)$

(33) The non negative in equalities are called _____

(a) Parameters (b) Constants

(c) Decision variables (d) Vertices

ANSWERS

1.	*a*	*2.*	*b*	*3.*	*a*	*4.*	*a*	*5.*	*d*	*6.*	*a*
7.	*c*	*8.*	*a*	*9.*	*d*	*10.*	*a*	*11.*	*c*	*12.*	*b*
13.	*b*	*14.*	*b*	*15.*	*c*	*16.*	*b*	*17.*	*c*	*18.*	*b*
19.	*c*	*20.*	*a*	*21.*	*d*	*22.*	*d*	*23.*	*d*	*24.*	*c*
25.	*a*	*26.*	*d*	*27.*	*a*	*28.*	*c*	*29.*	*b*	*30.*	*a*

31.	b	32.	a	33.	c