Assignment

Fundamental concepts, Simultaneous linear inequations

Basic Level

1. The solution set of the inequation $2x + y > 5$, is

(a) Half plane that contains the origin
(b) Open half plane not containing the origin
(c) Whole *xy*–plane except the points lying on the line $2x + y = 5$
(d) None of these

2. Inequation $y - x \leq 0$ represents

(a) The half plane that contains the positive *x*-axis
(b) Closed half plane above the line $y = x$ which contains positive *y*-axis
(c) Half plane that contains the negative *x*-axis
(d) None of these

3. If a point (*h, k*) satisfies an inequation $ax + by \geq 4$, then the half plane represented by the inequation is

(a) The half plane containing the point (*h, k*) but excluding the points on $ax + by = 4$
(b) The half plane containing the point (*h, k*) and the points on $ax + by = 4$
(c) Whole *xy*-plane
(d) None of these

4. If the constraints in a linear programming problem are changed

(a) The problem is to be re-evaluated
(b) Solution is not defined
(c) The objective function has to be modified
(d) The change in constraints is ignored.

5. The optimal value of the objective function is attained at the points

(a) Given by intersection of inequations with the axes only
(b) Given by intersection of inequation with *x*-axis only
(c) Given by corner points of the feasible region (d) None of these

6. Let X_1 and X_2 are optimal solutions of a *LPP*, then

(a) $X = \lambda X_1 + (1 - \lambda)X_2, \lambda \in R$ is also an optimal solution
(b) $X = \lambda X_{1,} + (1 - \lambda)X_2, 0 \leq \lambda \leq 1$ gives an optimal solution
(c) $X = \lambda X_1 + (1 + \lambda)X_2, 0 \leq \lambda \leq 1$ gives an optimal solution
(d) $X = \lambda X_1 + (1 + \lambda)X_2, \lambda \in R$ gives an optimal solution

7. The position f points *O* (0, 0) and *P* (2, –2) in the region of graph of inequations $2x - 3y < 5$, will be

(a) *O* inside and *P* outside
(b) *O* and *P* both inside
(c) *O* and *P* both outside
(d) *O* outside and *P* inside

8. The solution set of constraints $x + 2y \geq 11, 3x + 4y \leq 30, 2x + 5y \leq 30, x \geq 0, y \geq 0$ includes the point **[MP PET 1993]**

(a) (2, 3)
(b) (1, 1)
(c) (3, 4)
(d) (4, 3)

9. The solution set of linear constraints $x - 2y \geq 0, 2x - y \leq -2$ and $x, y \geq 0$, is

(a) $\left(-\frac{4}{3}, -\frac{2}{3}\right)$
(b) (1, 1)
(c) $\left(0, \frac{2}{3}\right)$
(d) (0, 2)

10. For the constraints of a *L.P.* problem given by $x_1 + 2x_2 \leq 2000, x_1 + x_2 \leq 1500$, $x_2 \leq 600$ and $x_1, x_2 \geq 0$, which one of the following points does not lie in the positive bounded region

(a) (1000, 0)
(b) (0, 500)
(c) (2, 0)
(d) (2000, 0)

11. The graph of $x \leq 2$ and $y \geq 2$ will be situated in the

(a) First and second quadrant
(b) Second and third quadrant
(c) First and third quadrant
(d) Third and fourth quadrant

12. The true statements for the graph of inequations $3x + 2y \leq 6$ and $6x + 4y \geq 20$, is

(a) Both graphs are disjoint
(b) Both do not contain origin
(c) Both contain point (1, 1)
(d) None of these

13. In which quadrant, the bounded region for inequations $x+y\le 1$ and $x-y\le 1$ is situated

(a) I, II (b) I, III (c) II, III (d) All the four quadrants

14. The region represented by the inequation system $x,y\ge 0, y\le 6, x+y\le 3,$ is

(a) Unbounded in first quadrant

(b) Unbounded in first and second quadrants

(c) Bounded in first quadrant

(d) None of these

15. If the number of available constraints is 3 and the number of parameters to be optimized is 4, then

(a) The objective function can be optimized (b) The constraints are short in number

(c) The solution is problem oriented (d) None of these

16. The intermediate solutions of constraints must be checked by substituting them back into

(a) Object function (b) Constraint equations (c) Not required (d) None of these

17. A basic solution is called non-degenerate, if

(a) All these basic variables are zero (b) None of the basic variables is zero

(c) At least one of the basic variable is zero (d) None of these

18. Objective function of a *L.P.P.* is

(a) A constraint (b) A function to be optimized

(c) A relation between the variables(d) None of these

19. "*The maximum or the minimum of the objecitve function occurs only at the corner points of the feasible region*". This theorem is known as Fundamental Theorem of

(a) Algebra (b) Arithmetic (c) Calculus (d) Extreme points

20. Which of the terms is not used in a linear programming problem **[MP PET 2000]**

(a) Slack variable (b) Objective function (c) Concave region (d) Feasible region

21. Which of the following is not true for linear programming problems **[Kurukshetra CEE 1998]**

(a) A slack variable is a variable added to the left hand side of a less than or equal to constraint to convert it into an equality

(b) A surplus variable is a variable subtracted from the left hand side of a greater than or equal to constraint to convert it into an equality

(c) A basic solution which is also in the feasible region is called a basic feasible solution

(d) A column in the simplex tableau that contains all of the variables in the solution is called pivot or key column

22. The value of objective function is maximum under linear constraints

(a) At the centre of feasible region (b) At (0, 0)

(c) At any vertex of feasible region (d) The vertex which is at maximum distance from (0, 0)

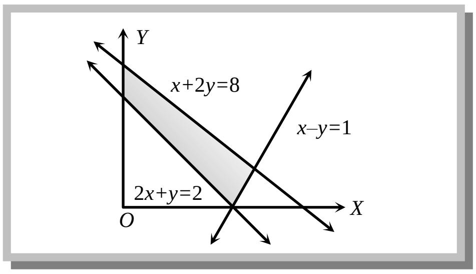
23. Which of the following sets are not convex

(a) $\{(x,y)|\ 3\le x^2+y^2\le 5\}$ (b) $\{(x,y)|\ 3x^2+2y^2\le 6\}$ (c) $\{(x,y)|\ y^2\le x\}$ (d) $\{(x,y|\ x\ge 2, x\le 3\}$

24. Which of the following sets are convex

(a) $\{(x,y)|\ x^2+y^2\ge 1\}$ (b) $\{(x,y)|\ y^2\ge x\}$ (c) $\{(x,y)|\ 3x^2+4y^2\ge 5\}$ (d) $\{(x,y)|\ y\ge 2, y\le 4\}$

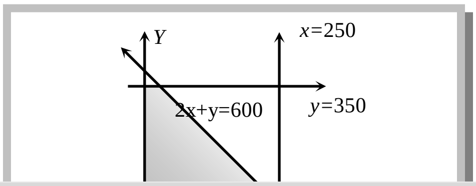
25. For the following shaded area, the linear constraints except $x\ge 0$ and $y\ge 0$, are



(a) $2x+y\le 2, x-y\le 1, x+2y\le 8$ (b) $2x+y\ge 2, x-y\le 1, x+2y\le 8$

(c) $2x+y\ge 2, x-y\ge 1, x+2y\le 8$ (d) $2x+y\ge 2, x-y\ge 1, x+2y\ge 8$

26. For the following feasible region, the linear constraints except $x\ge 0$ and $y\ge 0$, are



(a) $x \ge 250, y \le 350, 2x + y = 600$
(b) $x \le 250, y \le 350, 2x + y = 600$
(c) $x \le 250, y \le 350, 2x + y \ge 600$
(d) $x \le 250, y \le 350, 2x + y \le 600$

27. Which of the following is not a vertex of the positive region bounded by the inequalities $2x + 3y \le 6, 5x + 3y \le 15$ and $x, y \ge 0$

(a) (0, 2) (b) (0, 0) (c) (3, 0) (d) None of these

28. The vertex of common graph of inequalities $2x + y \ge 2$ and $x - y \le 3$, is

(a) (0, 0) (b) $\left(\frac{5}{3}, -\frac{4}{3}\right)$ (c) $\left(\frac{5}{3}, \frac{4}{3}\right)$ (d) $\left(-\frac{4}{3}, \frac{5}{3}\right)$

29. A vertex of bounded region of inequalities $x \ge 0, x + 2y \ge 0$ and $2x + y \le 4$, is

(a) (1, 1) (b) (0, 1) (c) (3, 0) (d) (0, 0)

30. A vertex of the linear inequalities $2x + 3y \le 6, x + 4y \le 4$ and $x, y \ge 0$, is

(a) (1, 0) (b) (1, 1) (c) $\left(\frac{12}{5}, \frac{2}{5}\right)$ (d) $\left(\frac{2}{5}, \frac{12}{5}\right)$

31. Consider the inequalities $x_1 + x_2 \le 3, 2x_1 + 5x_2 \ge 10, x_1, x_2 \ge 0$, which of the following points lies in the feasible region **[MP PET 2003]**

(a) (2, 2) (b) (1, 2) (c) (2, 1) (d) (4, 2)

32. The region represented by the inequalities $x \ge 6, y \ge 2, 2x + y \le 10, x \ge 0, y \ge 0$ is

(a) Unbounded (b) A polygon (c) Exterior of a triangle (d) None of these

Formulation of Linear Programming Problem

Basic Level

33. A whole sale merchant wants to start the business of cereal with Rs. 24,000. Wheat is Rs. 400 per quintal and rice is Rs. 600 per quintal. He has capacity to store 200 quintal cereal. He earns the profit Rs. 25 per quintal on wheat and Rs. 40 per quintal on rice. If he store x quintal rice and y quintal wheat, then for maximum profit the objective function is

(a) $25x + 40y$ (b) $40x + 25y$ (c) $400x + 600y$ (d) $\frac{400}{40}x + \frac{600}{25}y$

34. A firm produces two types of product A and B. The profit on both is Rs. 2 per item. Every product need processing on machines M_1 and M_2. For A, machines M_1 and M_2 takes 1 minute and 2 minute respectively and that of for B, machines M_1 and M_2 takes the time 1 minute and 1 minute. The machines M_1, M_2 are not available more than 8 hours and 10 hours any of day respectively. If the products made x of A and y of B, then the linear constraints for the *L.P.P.* except $x \ge 0, y \ge 0$, are

(a) $x + y \le 480, 2x + y \le 600$ (b) $x + y \le 8, 2x + y \le 10$ (c) $x + y \ge 480, 2x + y \ge 600$ (d) $x + y \le 8, 2x + y \ge 10$

35. In a test of Mathematics, there are two types of questions to be answered, short answered and long answered. The relevant data are given below

	Time taken to solve	Marks	Number of questions
Short answered questions	5 minutes	3	10
Long answered questions	10 minutes	5	14

The total marks are 100. Student can solve all the questions. To secure maximum marks, student solve x short answered and y long answered questions in three hours, them the linear constraints except $x \ge 0, y \ge 0$, are

(a) $5x + 10y \le 180, x \le 10, y \le 14$
(b) $x + 10y \ge 180, x \le 10, y \le 14$
(c) $5x + 10y \ge 180, x \ge 10, y \ge 14$
(d) $5x + 10y \le 180, x \ge 10, y \ge 14$

36. A company manufactures two types of telephone sets A and B. The A type telephone set requires 2 hour and B type telephone requires 4 hour to make. The company has 800 work hour per day. 300 telephone can pack in a day. The selling prices of A and B type telephones are Rs. 300 and 400 respectively. For maximum profit company produces x telephones of A type and y telephones of B type. Then except $x \ge 0$ and $y \ge 0$, linear constraints are

(a) $x + 2y \le 400; x + y \le 300$
(b) $2x + y \le 400; x + y \ge 300$

Max $z = 300x + 400y$ | Max $z = 400x + 300y$

(c) $2x + y \ge 400; x + y \ge 300$ (d) $x + 2y \le 400; x + y \ge 300$

Max $z = 300x + 400y$ | Max $z = 300x + 400y$

37. In a factory which produces two products *A* and *B*, in manufacturing product *A*, the machine and the carpenter requires 3 hours each and in manufacturing product B, the machine and carpenter requires 5 hour and 3 hour respectively. The machine and carpenter works at most 80 hour and 50 hour per week respectively. The profit on *A* and *B* are Rs. 6 and Rs. 8 respectively. If profit is maximum by manufacturing *x* and *y* units of *A* and *B* type products respectively, then for the function $6x + 8y$, the constraints are

(a) $x \ge 0, y \ge 0, 5x + 3y \le 80, 3x + 2y \le 50$ (b) $x \ge 0, y \ge 0, 3x + 5y \le 80, 3x + 3y \le 50$

(c) $x \ge 0, y \ge 0, 3x + 5y \ge 80, 2x + 3y \ge 50$ (d) $x \ge 0, y \ge 0, 5x + 3y \ge 80, 3x + 2y \ge 50$

38. The sum of two positive integers is at most 5. The difference between two times of second number and first number is at most 4. If the first number is *x* and second number *y*, then for maximizing the product of these two numbers, the mathematical formulation is

(a) $x + y \ge 5, 2y - x \ge 4, x \ge 0, y \ge 0$ (b) $x + y \ge 5, -2x + y \ge 4, x \ge 0, y \ge 0$

(c) $x + y \le 5, 2y - x \le 4, x \ge 0, y \ge 0$ (d) None of these

Advance Level

39. Mohan wants to invest the total amount of Rs. 15,000 in saving certificates and national saving bonds. According to rules, he has to invest at least Rs. 2000 in saving certificates and Rs. 2500 in national saving bonds. The interest rate is 8% on saving certificate and 10% on national saving bonds per annum. He invests Rs. *x* in saving certificates and Rs. *y* in national saving bonds. Then the objective function for this problem is

(a) $0.08x + 0.10y$ (b) $\frac{x}{2000} + \frac{y}{2500}$ (c) $2000x + 2500y$ (d) $\frac{x}{8} + \frac{y}{10}$

40. Two tailors *A* and *B* earn Rs. 15 and Rs. 20 per day respectively *A* can make 6 shirts and 4 pants in a day while *B* can make10 shirts and 3 pants. To spend minimum on 60 shirts and 40 pants, *A* and *B* work *x* and *y* days respectively. Then linear constraints except $x \ge 0, y \ge 0$, are

(a) $15x + 20y \ge 0, 60x + 40y \ge 0$ (b) $15x + 20y \ge 0, 6x + 10y = 10$

(c) $6x + 10y \ge 60, 4x + 3y \ge 40$ (d) $6x + 10y \le 60, 4x + 3y \le 40$

41. In the examination of P.E.T. the total marks of mathematics are 300. If the answer is right, marks provided is 3 and if the answer is wrong, marks provided is –1. A student knows the correct answer of 67 questions and remaining questions are doubtful for him. He takes the time $1\frac{1}{2}$ minute to give the correct answer and 3 minute that for doubtful. Total time is 3 hour. In the question paper after every two simple questions, one question is doubtful. He solves the questions one by one, then the number of questions solved by him, is

(a) 67 (b) 90 (c) 79 (d) 80

42. A shopkeeper wants to purchase two articles *A* and *B* of cost price Rs. 4 and Rs. 3 respectively. He thought that he may earn 30 paise by selling article *A* and 10 paise by selling article *B* He has not to purchase total articles of more than Rs. 24. If he purchases the number of articles of *A* and *B*, *x* and *y* respectively, then linear constraints are

(a) $x \ge 0, y \ge 0, 4x + 3y \le 24$ (b) $x \ge 0, y \ge 0, 30x + 10y \le 24$ (c) $x \ge 0, y \ge 0, 4x + 3y \ge 24$ (d) $x \ge 0, y \ge 0, 30x + 40y \ge 24$

43. A company manufacturers two types of products *A* and *B*. The storage capacity of its godown is 100 units. Total investment amount is Rs. 30,000. The cost prices of *A* and *B* are Rs. 400 and Rs. 900 respectively. All the products are sold and per unit profit is Rs. 100 and Rs. 120 through *A* and *B* respectively. If *x* units of *A* and *y* units of *B* be produced, then two linear constraints and iso-profit line are respectively

(a) $x + y = 100; 4x + 9y = 300, 100x + 120y = c$ (b) $x + y \le 100; 4x + 9y \le 300, x + 2y = c$

(c) $x + y \le 100; 4x + 9y \le 300, 100x + 120y = c$ (d) $x + y \ge 100; 9x + 4y \ge 300, 5x + 6y = c$

44. We have to purchase two articles *A* and *B* of cost Rs. 45 and Rs. 25 respectively. I can purchase total article maximum of Rs. 1000. After selling the articles *A* and *B*, the profit per unit is Rs. 5 and 3 respectively. If I purchase *x* and *y* numbers of articles *A* and *B* respectively, then the mathematical formulation of problem is

(a) $x \ge 0, y \ge 0, 45x + 25y \ge 1000, 5x + 3y = c$ (b) $x \ge 0, y \ge 0, 45x + 25y \le 1000, 5x + 3y = c$

(c) $x \ge 0, y \ge 0, 45x + 25y \le 1000, 3x + 5y = c$ (d) None of these

Graphical method of solution of Linear programming problems

Basic Level

45. The L.P. problem $Max\ z = x_1 + x_2$, such that $-2x_1 + x_2 \le 1, x_1 \le 2, x_1 + x_2 \le 3$ and $x_1, x_2 \ge 0$ has

(a) One solution (b) Three solution

(c) An infinite number of solutions (d) None of these

46. On maximizing $z = 4x + 9y$ subject to $x + 5y \le 200, 2x + 3y \le 134$ and $x, y \ge 0$, $z =$

(a) 380 (b) 382 (c) 384 (d) None of these

47. The point at which the maximum value of $(3x + 2y)$ subject to the constraints $x + y \le 2, x \ge 0, y \ge 0$ is obtained, is **[MP PET 1993]**

(a) (0, 0) (b) (1.5, 1.5) (c) (2, 0) (d) (0, 2)

48. The solution of a problem to maximize the objective function $z = x + 2y$ under the constraints $x - y \le 2, x + y \le 4$ and $x, y \ge 0$, is

(a) $x = 0, y = 4, z = 8$ (b) $x = 1, y = 2, z = 5$ (c) $x = 1, y = 4, z = 9$ (d) $x = 0, y = 3, z = 6$

49. The maximum value of $P = 6x + 8y$ subject to constraints $2x + y \le 30, x + 2y \le 24$ and $x \ge 0, y \ge 0$ is **[MP PET 1994,95]**

(a) 90 (b) 120 (c) 96 (d) 240

50. The maximum value of $P = x + 3y$ such that $2x + y \le 20, x + 2y \le 20, x \ge 0, y \ge 0$, is **[MP PET 1995]**

(a) 10 (b) 60 (c) 30 (d) None of these

51. The point at which the maximum value of $x + y$, subject to the constraints $x + 2y \le 70, 2x + y \le 95, x, y \ge 0$ is obtained, is

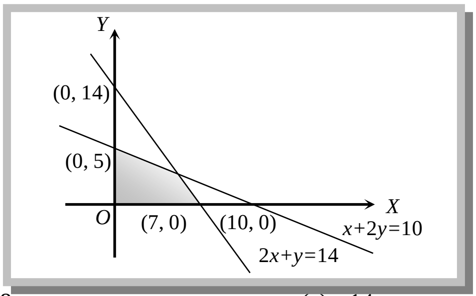
(a) (30, 25) (b) (20, 35) (c) (35, 20) (d) (40, 15)

52. If $3x_1 + 5x_2 \le 15$; $5x_1 + 2x_2 \le 10$; $x_1, x_2 \ge 0$

then the maximum value of $5x_1 + 3x_2$ by graphical method is

(a) $12\frac{7}{19}$ (b) $12\frac{1}{7}$ (c) $12\frac{3}{5}$ (d) 12

53. The maximum value of objective function $c = 2x + 3y$ in the given feasible region, is



(a) 29 (b) 18 (c) 14 (d) 15

54. The maximum value of the objective function $P = 5x + 3y$, subject to the constraints $x \ge 0, y \ge 0$ and $5x + 2y \le 10$ is **[AMU 1990, 92]**

(a) 6 (b) 10 (c) 15 (d) 25

55. The maximum value of $P = 8x + 3y$, subject to the constraints $x + y \le 3, 4x + y \le 6, x \ge 0, y \ge 0$ is **[AMU 1988]**

(a) 9 (b) 12 (c) 14 (d) 16

56. The maximum value of $P = 6x + 11y$ subject to the constraints

$2x + y \le 104$

$x + 2y \le 76$ and $x \ge 0, y \ge 0$ is

(a) 240 (b) 540 (c) 440 (d) None of these

57. For the L.P. problem, Min $z = -x_1 + 2x_2$, such that $-x_1 + 3x_2 \le 0, x_1 + x_2 \le 6, x_1 - x_2 \le 2$ and $x_1, x_2 \ge 0$, then $x_1 =$

(a) 2 (b) 8 (c) 10 (d) 12

58. For the L.P. problem Min $z = 2x_1 + 3x_2$, such that $-x_1 + 2x_2 \le 4, x_1 + x_2 \le 6, x_1 + 3x_2 \ge 9$ and $x_1, x_2 \ge 0$

(a) $x_1 = 1.2$ (b) $x_2 = 2.6$ (c) $z = 10.2$ (d) All of these

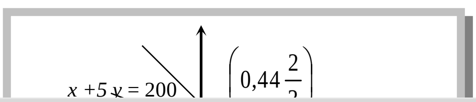
59. For the L.P. problem Min $z = 2x + y$ subject to $5x + 10y \le 50, x + y \ge 1, y \le 4$ and $x, y \ge 0$, $z =$

(a) 0 (b) 1 (c) 2 (d) 1/2

60. For the L.P. problem Min. $z = 2x - 10y$ subject to $x - y \ge 0, x - 5y \ge -5$ and $x, y \ge 0$, $z =$

(a) – 10 (b) – 20 (c) 0 (d) 10

61. The maximum value of objective function $c = 2x + 2y$ in the given feasible region, is



(a) 134 (b) 40 (c) 38 (d) 80

62. The Minimum value of $P = x + 3y$ subject to constraints $2x + y \le 20, x + 2y \le 20, x \ge 0, y \ge 0$ is

(a) 10 (b) 60 (c) 30 (d) None of these

63. Min. $Z = -x_1 + 2x_2$ **[EAMCET 1995]**

Subjected to $x_1 + 3x_2 \le 10$,

$x_1 + x_2 \le 6$, $x_1 - x_2 \le 2$ and $x_1, x_2 \ge 0$ is :

(a) – 4 (b) – 2 (c) 2 (d) None of these

Advance Level

64. To maximize the objective function $z = 2x + 3y$ under the constraints $x + y \le 30, x - y \ge 0, y \le 12, x \le 20, y \ge 3$ and $x, y \ge 0$, is at

(a) $x = 12, y = 18$ (b) $x = 18, y = 12$ (c) $x = 12, y = 12$ (d) $x = 20, y = 10$

65. The point at which the maximum value of $x + y$ subject to the constraints $2x + 5y \le 100, \frac{x}{25} + \frac{y}{49} \le 1, x, y \ge 0$ is obtained, is

(a) (10, 20) (b) (20, 10) (c) (15, 15) (d) $\left(\frac{50}{3}, \frac{40}{3}\right)$

66. The maximum value of $Z = 4x + 3y$ subject to the constraints $3x + 2y \ge 160, 5x + 2y \ge 200, x + 2y \ge 80; x, y \ge 0$ is **[MP PET 1998]**

(a) 320 (b) 300 (c) 230 (d) None of these

67. By graphical method, the solution of linear programming problem **[MP PET 1996]**

maximize $z = 3x_1 + 5x_2$

subject to $3x_1 + 2x_2 \le 18$,

$x_1 \le 4$,

$x_2 \le 6$

$x_1 \ge 0, x_2 \ge 0$ is

(a) $x_1 = 2, x_2 = 0, z = 6$ (b) $x_1 = 2, x_2 = 6, z = 36$ (c) $x_1 = 4, x_2 = 3, z = 27$ (d) $x_1 = 4, x_2 = 6, z = 42$

68. For the L.P. problem $Max\ z = 3x_1 + 2x_2$, such that $2x_1 - x_2 \ge 2, x_1 + 2x_2 \le 8$ and $x_1, x_2 \ge 0$, $z =$

(a) 12 (b) 24 (c) 36 (d) 40

69. The maximum value of $P = 2x + 5y$ subject to the constraints **[AMU 1994]**

$x + 4y \le 24$, $3x + y \le 21$, $x + y \le 9$ and $x \ge 0, y \ge 0$ is

(a) 33 (b) 35 (c) 20 (d) 105

70. The maximum value of $P = 5x + 7y$ subject to the constraints

$x + y \le 4$, $3x + 8y \le 24$, $10x + 7y \le 35$ and $x \ge 0, y \ge 0$ is

(a) 14.8 (b) 24.8 (c) 34.8 (d) None of these

71. The point which provides the solution to the linear programming problem, Max. $(2x + 3y)$, subject to constraints : **[MP PET 2000]**

$x \ge 0, y \ge 0$, $2x + 2y \le 9$, $2x + y \le 7$, $x + 2y \le 8$ is

(a) (3, 2.5) (b) (2, 3.5) (c) (2, 2.5) (d) (1, 3.5)

72. For maximum value of $Z = 5x + 2y$, subject to the constraints

$2x + 3y \ge 6$, $x - 2y \le 2$, $6x + 4y \le 24$, $-3x + 2y \le 3$ and $x \ge 0, y \ge 0$ the values of x and y are

(a) 18/7, 2/7 (b) 7/2, 3/4 (c) 3/2, 15/4 (d) None of these

73. For the following linear programming problem : **[MP PET 2003]**

'Minimize $Z = 4x + 6y$ ', subject to the constraints $2x + 3y \geq 6,\ x + y \leq 8,\ y \geq 1, x \geq 0$, the solution is

(a) (0, 2) and (1, 1) (b) (0, 2) and $\left(\frac{3}{2}, 1\right)$ (c) (0, 2) and (1, 6) (d) (0, 2) and (1, 5)

74. The minimum value of $Z = 2x_1 + 3x_2$ subject to the constraints $2x_1 + 7x_2 \geq 22,\ x_1 + x_2 \geq 6,\ 5x_1 + x_2 \geq 10$ and $x_1, x_2 \geq 0$ is **[MP PET 2003]**

(a) 14 (b) 20 (c) 10 (d) 16

75. For the L.P. problem Min. $z = x_1 + x_2$, such that $5x_1 + 10x_2 \leq 0, x_1 + x_2 \geq 1, x_2 \leq 4$ and $x_1, x_2 \geq 0$

(a) There is a bounded solution (b) There is no solution

(c) There are infinite solution s (d) None of these

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Answer Sheet

Linear Programming ***Assignment (Basic and Advance Level)***

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
b	a	b	a	c	b	a	c	a	d	a	a	d	c	b	b	b	b	d	c
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
d	d	a	d	b	d	d	b	d	c	b	a	b	a	a	a	b	c	a	d
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
b	a	c	b	c	b	c	a	b	c	d	a	b	c	c	c	a	d	b	a
61	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**	**71**	**72**	**73**	**74**	**75**					
a	d	b	b	d	d	b	b	a	b	d	b	b	a	c					