ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

FOR GOD AND COUNTRY

Worksheet-26

SUBJECT – MATHEMATICS

2nd-term

Chapter: LPP **Class: XII**

Topic : LPP **Date: 17.11.2020**

Choose the correct option (1 X 15= 15)

Question 1.

Feasible region in the set of points which satisfy

(a) The objective functions

(b) Some the given constraints

(c) All of the given constraints

(d) None of these

Question 2.

Of all the points of the feasible region for maximum or minimum of objective function the points

(a) Inside the feasible region

(b) At the boundary line of the feasible region

(c) Vertex point of the boundary of the feasible region

(d) None of these

Question 3.

Objective function of a linear programming problem is

(a) a constraint

(b) function to be obtimized

(c) A relation between the variables

(d) None of these

Question 4.
A set of values of decision variables which satisfies the linear constraints and nn-negativity conditions of a L.P.P. is called its
(a) Unbounded solution
(b) Optimum solution
(c) Feasible solution
(d) None of these

Question 5.
The maximum value of the object function $Z = 5x + 10y$ subject to the constraints $x + 2y \leq 120$, $x + y \geq 60$, $x - 2y \geq 0$, $x \geq 0$, $y \geq 0$ is
(a) 300
(b) 600
(c) 400
(d) 800

Question 6.
The maximum value of $Z = 4x + 2y$ subject to the constraints $2x + 3y \leq 18$, $x + y \geq 10$, $x, y \leq 0$ is
(a) 36
(b) 40
(c) 30
(d) None of these

Question 7.
In equation $3x - y \geq 3$ and $4x - 4y > 4$
(a) Have solution for positive x and y
(b) Have no solution for positive x and y
(c) Have solution for all x
(d) Have solution for all y

Question 8.
The maximum value of $Z = 3x + 4y$ subjected to contraints $x + y \leq 40$, $x + 2y \leq 60$, $x \geq 0$ and $y \geq 0$ is
(a) 120
(b) 140
(c) 100
(d) 160

Question 9.

Maximize Z = 11 x + 8y subject to $x \leq 4$, $y \leq 6$, $x + y \leq 6$, $x \geq 0$, $y \geq 0$.

(a) 44 at (4, 2)

(b) 60 at (4, 2)

(c) 62 at (4, 0)

(d) 48 at (4, 2)

Question 10.

Maximize Z = 3x + 5y, subject to $x + 4y \leq 24$, $3x + y \leq 21$, $x + y \leq 9$, $x \geq 0$, $y \geq 0$

(a) 20 at (1, 0)

(b) 30 at (0, 6)

(c) 37 at (4, 5)

(d) 33 at (6, 3)

Question 11.

Maximize Z = 4x + 6y, subject to $3x + 2y \leq 12$, $x + y \geq 4$, $x, y \geq 0$

(a) 16 at (4, 0)

(b) 24 at (0, 4)

(c) 24 at (6, 0)

(d) 36 at (0, 6)

Question 12.

Maximize Z = 7x + 11y, subject to $3x + 5y \leq 26$, $5x + 3y \leq 30$, $x \geq 0$, $y \geq 0$

(a) 59 at $(\frac{9}{2}, \frac{5}{2})$

(b) 42 at (6, 0)

(c) 49 at (7, 0)

(d) 57.2 at (0, 5.2)

Question 13.

Maximize Z = 6x + 4y, subject to $x \leq 2$, $x + y \leq 3$, $-2x + y \leq 1$, $x \geq 0$, $y \geq 0$

(a) 12 at (2, 0)

(b) $\frac{140}{3}$ at $(\frac{2}{3}, \frac{1}{3})$

(c) 16 at (2, 1)

(d) 4 at (0, 1)

Question 14.

Maximize $Z = 10 x_1 + 25 x_2$, subject to $0 \le x_1 \le 3, 0 \le x_2 \le 3, x_1 + x_2 \le 5$

(a) 80 at (3, 2)

(b) 75 at (0, 3)

(c) 30 at (3, 0)

(d) 95 at (2, 3)

Question 15.

$Z = 20x_1 + 20_2$, subject to $x_1 \ge 0, x_2 \ge 0, x_1 + 2x_2 \ge 8, 3x_1 + 2x_2 \ge 15, 5x_1 + 2x_2 \ge 20$. The minimum value of Z occurs at

(a) (8, 0)

(b) $(\frac{5}{2}, \frac{15}{4})$

(c) $(\frac{7}{2}, \frac{9}{4})$

(d) (0, 10)

Prepared by :-

Mr. SUKUMAR MANDAL (SkM).