OR- Assignment (Lab-8)

Write code to solve the following Integer programming problem by cutting plane method of Gomory. Print the input, solutions and optimized value. Your output must have all the tables. Submit your code and output file for each question separately.

1. **Min** $Z = 2x_1 + 15x_2 + 18x_3$ subject to

$$\begin{aligned} -x_1 + 2x_2 - 6x_3 &\leq -10 \\ x_2 + 2x_3 &\leq 6 \\ 2x_1 + 10x_3 &\leq 19 \\ -x_1 + x_2 &\leq -2 \\ x_1, x_2, x_3 &\geq 0. \end{aligned}$$

2. **Max** $Z = 3x_1 + 4x_2$ subject to

$$\begin{aligned} 3x_1 - x_2 &\leq 12 \\ 3x_1 + 11x_2 &\leq 66 \\ x_1, x_2 &\geq 0. \end{aligned}$$

3. **Max** $Z = x_1 + x_2$ subject to

$$\begin{aligned} 2x_2 &\leq 7 \\ x_1 + x_2 &\leq 7 \\ 2x_1 &\leq 11 \\ x_1, x_2 &\geq 0. \end{aligned}$$

4. **Max** $Z = 7x_1 + 9x_2$ subject to

$$\begin{aligned} -x_1 + 3x_2 &\leq 6 \\ 7x_1 + x_2 &\leq 35 \\ x_1, x_2 &\geq 0. \end{aligned}$$

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