লক্ষীমপুৰ তেলাহী কমলাবৰীয়া মহাবিদ্যালয়
LAKHIMPUR TELAHI KAMALABORIA COLLEGE
Azad, North Lakhimpur, Assam - 787031

ASSIGNMENT

B.Sc.4^{th} Semester 2020

Mathematics (Major)

Paper:MM 402 : Linear Programming

Date: Sept, 2020 Due date-01/10/20 Max mark: 50

All questions are compulsory

1. (a) Solve the LP problem in graphical method

$$\begin{aligned} \text{Maximize} \quad & z = -x_1 + 3x_2 \\ \text{subject to} \quad & x_1 - x_2 \geq -1 \\ & -0.5x_1 + 1.5x_2 \leq 3 \\ & \text{and} \quad x_1, x_2 \geq 0 \end{aligned}$$

(9)

(b) Define slack,surplus and artificial variables Solve the LP problem by using simplex method

$$\begin{aligned} \text{Maximize} \quad & z = 3x_1 + 5x_2 + 4x_3 \\ \text{subject to} \quad & 2x_1 + 3x_2 \leq 8 \\ & 2x_2 + 5x_3 \leq 10 \\ & 3x_1 + 2x_2 + 4x_3 \leq 15 \\ & \text{and} \quad x_1, x_2, x_3 \geq 0 \end{aligned}$$

(6+10)

2. (a) Write short notes on
   1. North West Corner Method
   2. Least Cost Method
   3. Vogels' Approximation Method

(15)

(b) Discuss about MODI transportation method to find basic feasible solution using any transportation problems **(10)**

Best wishes