

TEZPUR UNIVERSITY
Assignment (Spring) 2020
MMS 403: Mathematical Programming

Total Marks: 30

The figures in the right-hand margin indicate marks for the individual question.

All questions are compulsory.

Answers should be concise and entire answer to a question should be together. State assumptions wherever made.

1. Use two phase Simplex method to solve **6**

$$\begin{aligned} \text{Max } z &= -\frac{15}{2}x_1 + 3x_2, \text{ subject to} \\ 3x_1 - x_2 - x_3 &\geq 3, \\ x_1 - 7x_2 + x_3 &\geq 2, \\ x_1 \geq 0, x_2 \geq 0, x_3 &\geq 0. \end{aligned}$$

2. Write a short note on Gomory's Cutting Plane (All IPP) Algorithm. Illustrate with an example. **12**
3. What is degeneracy? Discuss a method to resolve degeneracy in LPP. **8**
4. Give an LPP which has no feasible solution. Illustrate it by graphical method. **4**

-- × --