

D 30571

(Pages : 4)

Name.....

Reg. No.....

FIFTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION, NOVEMBER 2022

Mathematics

MTS 5B 08—LINEAR PROGRAMMING

(2020 Admission onwards)

Time : Two Hours

Maximum : 60 Marks

Section A

Answer any number of questions.

Each question carries 2 marks.

Ceiling is 20.

1. Define optimal solution.
2. Draw and shade a bounded polyhedral convex subset in $\mathbb{R}^2$.
3. Represent the following linear programming problem into canonical slack minimization linear programming problem ;

Minimize $c(x_1, x_2, x_3) = 20x_1 + 30x_2 + 25x_3$ subject to

$$x_1 + 2x_2 + 2x_3 \geq 200$$

$$2x_1 + 2x_2 + x_3 \geq 150$$

$$x_1, x_2, x_3 \geq 0$$

4. Pivot on 5 in the canonical maximum tableau given below :

x_1	x_2	-1	
1	2	3	$= -t_1$
4	5	6	$= -t_2$
7	8	9	$= f$

5. Write the simplex algorithm for maximum basic feasible tableaux.
6. Define negative transpose.

Turn over

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21. Write transportation algorithm and use this algorithm solve the following transportation problem :

5	12	8	50	26
11	4	10	8	20
14	50	1	9	30
15	20	26	15	

(1 × 10 = 10 m)

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