

THE OPEN UNIVERSITY OF SRI LANKA

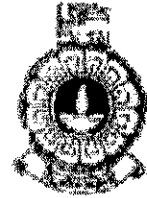
B.Sc. Degree Programme

APPLIED MATHEMATICS-LEVEL 05

ADU5300- Linear Programming

NO BOOK TEST 2017/2018

Duration: One Hour



Date: 28.07.2018	Time: 02.30 p.m.- 03.30 p.m.
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Answer all questions.

(1) Use the Big-M method to solve the following linear programming problem:

Maximize $z = -2x_1 - x_2,$

Subject to $3x_1 + x_2 = 3,$

$4x_1 + 3x_2 \geq 6,$

$x_1 + 2x_2 \leq 4,$

$x_1, x_2 \geq 0.$

(2) Consider the following linear programming problem:

Maximize $z = 3y_1 + 6y_2 + 3y_3,$

Subject to $3y_1 + 4y_2 + y_3 \leq 2,$

$y_1 + 3y_2 + 2y_3 \leq 1,$

$y_1, y_2, y_3 \geq 0.$

- (i) Write down the dual linear programme for the above primal problem.
- (ii) Solve the dual linear programme obtained in part (i) by using the dual simplex method. Hence, write down the optimal solution to the primal problem.
