THE OPEN UNIVERSITY OF SRI LANKA

B.Sc. /B.Ed. Degree Programme

APPLIED MATHEMATICS-LEVEL 05

APU3141/APE5141- Linear Programming

NO BOOK TEST 2015/2016

Duration: One Hour.

Date: 08.05.2016	**Time: 02.30 p.m.- 03.30 p.m.**

Answer all questions.

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

Maximize $z = 2x_1 + x_2 - 3x_3$,

Subject to $x_1 + x_2 + x_3 \geq 6$,

$2x_1 + x_2 = 14$,

$x_1, x_2, x_3 \geq 0$.

(2) Consider the following Primal problem:

Maximize $z = -y_1 + 3y_2$,

Subject to $2y_1 + 3y_2 \leq 6$,

$y_1 - 2y_2 \geq -2$,

$y_1 \geq 0, y_2 \geq 0$

(i) Write down the dual problem for the above primal problem.

(ii) Solve the dual problem given in (i) by using the dual simplex method. Hence, write the solution of the primal problem.

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