Daffodil International University

Department of Computing and Information System

Class Test 3, Section: 18A, Set: B

Course code: BI334, Course title: Data Analysis and Business Model

Time: 30 minutes | Full marks: 15

1. What is a linear programming? State the fundamental theorem of linear programming. 3
2. Explain two components of an LP model with suitable examples. 2
3. What is the Simplex method? How does it solve a linear optimization problem? 3
4. (a) True or false: In linear programming problem, the feasible region of is formed by non-linear constraints.
   (b) True or false: The Interior-Point Method always starts from an interior point of the feasible region. 1
5. Consider the following linear programming problem: 5

   Maximize $4x_1 + 3x_2$, subject to $x_1 + x_2 \leq 6$, $2x_1 + x_2 \leq 8$, and $x_1, x_2 \geq 0$

   Answer the following:

   a) Identify the objective function. (1)

   b) How many decision variables are there? Name them. (1)

   c) How many constraints (excluding non-negativity constraints) are there? (1)

   d) Is the point (1,2) feasible? Show your calculation. (2)

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