Assignment 8

The due date for submitting this assignment has passed. As per our course rules, you have not submitted this assignment.

1. In this course, we have many decision-making units (DMUs) and we are required to find the worst of the process of the DMUs or DCC, on what the efficiency of the systems. We can compute them with PPM algorithms and also find out, to what degree they are efficient. We can use for the above case data system or not. We have used DSS for the assignment.

   - data envelopment analysis
   - decision making analysis
   - data envelopment analysis
   - data envelopment analysis
   - none of the above

   1 point
   No, the answer is incorrect. Score: 
   Accepted Answer: 
   None of the above

2. Step 4: Find the problem in a LP problem
   - Step 4: Solve the problem using simplex method
   - Step 4: Solve the optimal solution in the linear programming problem, if yes then STOP; otherwise, go back to step 1.
   - Step 4: Add a dummy variable to the objective function
   - Step 4: Find a new optimum solution and check if there are all integer for all decision variables, and if not then STOP. The answer is step 1.

   1 point
   No, the answer is incorrect. Score: 
   Accepted Answer: 
   None of the above

3. Mixed Integer Linear Programming (MIP) problems are generally solved using a linear LP-based Branch and Bound (BB) Algorithm

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   - Mixed Integer Linear Programming (MIP) problems are generally solved using a linear LP-based Branch and Bound (BB) Algorithm
   - None of the above

   1 point
   Yes, the answer is incorrect. Score: 
   Accepted Answer: 
   None of the above

4. In a branch and bound method, we generate a search tree, and observe the corresponding LP relaxations and, if necessary, selecting branching variables.

   - True
   - False

   1 point
   No, the answer is incorrect. Score: 
   Accepted Answer: 
   False

5. In a branch and bound method, if we reach a point at which we can solve the LP problem or otherwise dispose of all leaf nodes, then we have solved the original MIP.

   - True
   - False

   1 point
   No, the answer is incorrect. Score: 
   Accepted Answer: 
   False

6. Data envelopment analysis (DEA) is a non-parametric method in operations research and economics for the estimation of production frontiers.

   - True
   - False

   1 point
   No, the answer is incorrect. Score: 
   Accepted Answer: 
   True

7. Like Stochastic Frontier Analysis (SFA), DEA identifies a "frontier" which are characterized as an extreme point method that assumes that the firms can be modeled to produce a certain level of output utilizing specific inputs levels, another firm of equal scale should be capable of reaching the same.

   - True
   - False

   1 point
   No, the answer is incorrect. Score: 
   Accepted Answer: 
   True

8. DEA has been used for both production and cost data, utilizing the selected variable, such as unit cost and output. DEA software searches the pairs with the smallest cost for any given output, connecting those pairs to form the efficiency frontier. Any company not on the frontier is considered inefficient.

   - True
   - False

   1 point
   No, the answer is incorrect. Score: 
   Accepted Answer: 
   False

9. Some of the advantages of DEA are:

   1. It can be used to explicitly specify a mathematical concept for the production function

   2. It may be used to estimate the probability of the DMUs being on the frontier

   3. It is capable of handling multiple inputs and outputs

   4. It is capable of being used with any input/output measurement of the source of efficiency which can be analyzed and quantified for each evaluated unit

   - only 1 and 2 are true
   - only 1, 2, and 4 are true
   - none of the above

   1 point
   No, the answer is incorrect. Score: 
   Accepted Answer: 
   None of the above

10. DEA has been credited for requiring a complete specification for the functional form of the production frontier or the distribution of efficient deviations from the frontier.

    - True
    - False

    1 point
    No, the answer is incorrect. Score: 
    Accepted Answer: 
    False