**OM 305 S23 Quiz 4 (Optional) 5/14/23**

00:30:00

Last Name


First Name


Email address


ID:


When you click the next button, the quiz will begin. Do your best to answer each question correctly. You have 30 minutes to complete this quiz. Please note; when you are on the page with the question # 30 do not click "next" unless you are ready to submit your quiz for grading. Good Luck!

**Question 1 of 30**

1. Which of the following statements (is/are) true regarding the concept of a Constraint?

* It is an equation or inequality that restricts the values of the decision variables (0 points)
* Constraints are restrictive conditions that may affect the optimal value of the objective function (0 points)
* The aim of Linear Programming is to concurrently satisfy all constraints. (0 points)
* It is an equivalent of wearing seat belts. (0 points)
* It is judgement against a person. (0 points)
* None of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 2 of 30**

2. Problem Formulation is:

* the process of translating a verbal statement of a problem into a mathematical model. (0 points)
* a solution to a problem on which constraints conflict with each other. (0 points)
* a solution to a problem in which the objective function cannot be defined (0 points)
* applies only to the binary problems (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 3 of 30**

3. A constraint fiction is the portion of the constraint containing a variable:

* True (10 points)
* False (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 4 of 30**

4. In Linear programming an objective function is either maximized or minimized:

* True (10 points)
* False (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 5 of 30**

5. Which of the following statements is true with regards to the concept of a Linear Program:

* it is a mathematical model with a linear objective function, a set of linear constraints, and non-negative variables. (0 points)
* it does not contain a set of constraints (0 points)
* the decision variables can be negative (0 points)
* the objective function is equal to zero (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 6 of 30**

6. Which of the following statement is true with regards to the concept of Non-negativity constraints:

* it is a set of constraints that require all variables to be non-negative (0 points)
* it is a set of constraints that allow for some variables to be negative (0 points)
* it is a set of constraints that requires all variables to be negative (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 7 of 30**

7. A Feasible Solution is the solution that satisfies all constraints:

* True (10 points)
* False (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 8 of 30**

8. An Optimal Solution is a feasible solution that maximizes or minimizes the value of the objective function:

* True (10 points)
* False (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 9 of 30**

9. Standard form is:

* a linear program in which all constraints are written as equities (0 points)
* a linear program in which all constraints are written as inequalities (0 points)
* a linear program with no constraints (0 points)
* a liner program with all constraints equal to zero (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 10 of 30**

10. Infeasible Linear Program is:

* a linear program model that has no feasible solution (0 points)
* a Linear Programming model that results in an optimal solution (0 points)
* a Linear Programming model that can be used to solve minimization problems (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 11 of 30**

11. Which of the following is correct in regard to the Properties of linear Programming?

* problems seek to maximize or minimize an objective (0 points)
* constraints limit the degree to which the objectives can be achieved (0 points)
* there must be an alternatives that are available (0 points)
* mathematical relationships are linear (0 points)
* Solver functionality in Excel cannot be used to solve these problems (0 points)
* all of these (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 12 of 30**

12. Linear Program mining is a technique that helps in resource allocation decisions:

* True (10 points)
* False (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 13 of 30**

13. Which of the following are technical requirements of Linear Programming:

* certainty (0 points)
* proportionality (0 points)
* additivity (0 points)
* divisibility (0 points)
* non-negativity (0 points)
* neutrality (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 14 of 30**

14. Product Mix Problems:

* use Linear Programming to decide how much of each product to make, given a series of resource restrictions (0 points)
* is used when the amounts of required ingredients are unknown (0 points)
* are widely used as a project management tools (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 15 of 30**

15. Which of the following steps are included in the Modelling Process:

* define the problem (0 points)
* develop a model (0 points)
* acquire data (0 points)
* develop solution (0 points)
* test the solution (0 points)
* analyze the results (0 points)
* develop recommendations (0 points)
* verify the actual real-world results (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 16 of 30**

16. Lack of feasible solution occurs:

* when constraints conflict with each other (0 points)
* when constraints do not conflict with each other (0 points)
* when there are no firm constraints (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 17 of 30**

17. Which of the following is correct in regard to the concept of an Unbounded problem:

* it occurs when the profit in a maximization problem is shown to be infinitely large (0 points)
* these kinds of problems do not exist (0 points)
* it is missing one or more constraints (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 18 of 30**

18. A redundant constraint:

* does not affect the feasibility solution (0 points)
* will always affect the feasible solution (0 points)
* converts a feasible solution to an unfeasible solution (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 19 of 30**

19. Multiple Optimal Solutions are possible in LP programs:

* True (10 points)
* False (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 20 of 30**

20. Sensitivity Analysis:

* an important function of sensitivity analysis is to allow managers to experiment with values of the input parameters (0 points)
* can only be used in Integer Linear programs (0 points)
* can only be used in Binary Linear Programs (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 21 of 30**

21. The Shadow Price is:

* the increase in the objective function that results from a one-unit increase in the right-hand side of the constraint. (0 points)
* the ratio of profit or revenue over the amount of resources needed per unit of time (0 points)
* the price that is negotiates (0 points)
* the unit retail price that does not cover its fixed costs (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 22 of 30**

22. Media Selection Problem:

* can be approached with LP to maximize audience exposure (0 points)
* used to minimize advertising costs (0 points)
* widely applied by Best Buy in the selection of TV models on display (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 23 of 30**

23. A transportation LP Program assumes that:

* one constraint for each demand source and one constraint for each supply destination (0 points)
* it can be used in a media selection process (0 points)
* it can be used in blending problems (0 points)
* it can be used in a portfolio allocation process (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 24 of 30**

24. Constrained Mathematical Models are models with an objective function and one or more constraints:

* True (10 points)
* False (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 25 of 30**

25. Which of the following is true with regards to the concept of a Slack Variable:

* these variables are added to each other, and the sum is not equal to the constraint (0 points)
* each Slack variable represents an unused resource (0 points)
* it is a set of variables that does not require any work (0 points)
* it is a set of variables that can be delayed (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 26 of 30**

26. A Simplex method is a matrix algebra method used in solving LP problems:

* True (10 points)
* False (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 27 of 30**

27. Which of the following is true with regards to the concept of a Surplus variable:

* it is a variable inserted in a greater-than or equal to constraint to create equality (0 points)
* it represents the amount of resources usage above the minimum required usage (0 points)
* it is not a part of the LP body of knowledge (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 28 of 30**

28. Which of the following is true with regards to the concept of Integer Linear programming:

* the parameter values are known with certainty (0 points)
* the applicable functions and constraints returns are constant (0 points)
* there is no interaction between decision variables (0 points)
* a model in which some or all of the decision variables are restricted to integer values (0 points)
* the results can be shown as fractions (0 points)
* none of these (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 29 of 30**

29. Binary Integer LP is a model in which all decision variables can have values other than 0 and 1.

* True (10 points)
* False (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

**Question 30 of 30**

30. A binding Constraint is a constraint that is satisfied with equity at the optimum point:

* True (10 points)
* False (0 points)

***(10 points) | \_\_\_***

Correct

Incorrect

You have reached the end of the quiz. Please click next to submit your work for grading.