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Courses » Advanced Green Manufacturing Systems

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Unit 4 - Week 2

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Certification exam

Course outline

How to access
the portal

Week 0

Week 1

Week 2

- Lecture 04: Introduction to optimization
- Lecture 05: Mathematical modeling example
- Lecture 06: Rules of modeling
- Lecture 07: Modeling with continuous variable - Part 1
- Lecture 08: Modeling with continuous variable -Part 2
- Quiz : Assignment 2
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- Advanced

Assignment 2

The due date for submitting this assignment has passed.

As per our records you have not submitted this **Due on 2019-02-13, 23:59 IST.** assignment.

- 1) A prospective college student from Kanpur is planning to visit the campuses of three colleges in India (Bombay, Delhi and Madras) on one extended trip starting from and returning to Kanpur. **3 points**

The student wants to visit each college only once while making the round-trip as cheap as possible. The cost of travelling between cities are given below.

	Kanpur	Delhi	Bombay	Madras
Kanpur	0	2600	3400	7800
Delhi	2600	0	1800	5200
Bombay	3400	1800	0	5100
Madras	7800	5200	5100	0

Consider the following constraint. The variable x is binary which assigns 1 if the student travels from city i to j , and 0 otherwise.

$$\sum_{j=1}^4 x_{i,j} = 1 \quad \text{for all } i$$

Choose the most appropriate answer from below.

- This constraint will assure that each city will be visited only once
- This constraint will prevent to have any city as the origin, multiple times
- This is not a valid constraint
- None of these

No, the answer is incorrect.
Score: 0

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The constraint, $x_{i,j} + x_{j,i} = 1$, is also valid for the problem.



The inequality constraint will assure that all cities will be travelled



The inequality constraint will assure that the model remains feasible



None of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

The inequality constraint will assure that the model remains feasible

3) Once the abstraction of a system under study has been completed, it becomes easier to solve the problem manually. **2 points**

Is the statement true or false?



True



False

No, the answer is incorrect.

Score: 0

Accepted Answers:

False

4) There is only one unique way to model an optimization problem. **2 points**

Is the statement above true or false ?



True



False

No, the answer is incorrect.

Score: 0

Accepted Answers:

False

5) The objective function in an optimization model will provide the optimal values of ____? **2 points**



Constraint



Variable



Objective function does not provide optimal values



None of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

Variable

6) Choose the correct statement from below. **2 points**



Optimization solvers work faster with the models that have variables with discrete values.



Optimization solvers work faster with the models that have variables with continuous values



The type of variable in an optimization model has no effect on solver efficiency



None of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

Optimization solvers work faster with the models that have variables with continuous values

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