

CEE123/223
Transportation Systems III:
Planning & Forecasting

Quiz 1. Solutions

Transportation Planning Process

Transportation Systems Analysis

Demand, Performance, Equilibration

Link Performance Functions

Minimum Paths

Spring 2024

CEE123 Quiz 1
Transport Problems

1. Question 100-01 (1 point)

Transportation problems:

- a. are gaps between desired and observed measures of transportation system performance
- b. impact both transportation and other metropolitan systems and need to be mitigated
- c. are usually prioritized based on an area's overall vision, values, goals, and objectives
- d. **All of the above**

CEE 123 Quiz Master
Transport Problems

2. Question 100-32 (1 point)

Accessibility can be defined as:

- a. a system output defining real travel costs and activity benefits
- b. **a system input representing potential travel costs and activity benefits**
- c. the number of reachable opportunities multiplied by the corresponding travel times
- d. None of the above

CEE123 Quiz 1
Transportation Planning Process

3. Question 110-04 (1 point)

Travel Forecasting occurs as part of which step in the Transportation Planning Process?

- a. Generation of Alternative Solutions
- b. Engineering Design and Project Programming
- c. **Analysis of Alternative Solutions**
- d. Implementation and Monitoring

CEE 123 Quiz Master
Transportation Planning Process

4. Question 110-07 (1 point)

Which agencies holds primary responsibility for regional transportation planning?

- a. City Departments of Public Works
- b. County Transportation Authorities
- c. **Metropolitan Planning Organizations**
- d. State Departments of Transportation

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Transportation Systems Analysis

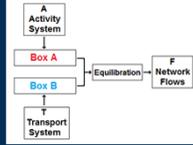
5. Question 120-01 (1 point)

Which of the following sequences reflects the correct top to bottom hierarchy of Transportation Systems Analysis (TSA), the Transportation Planning Process (TPP), and the Four Step Model (FSM)?

- a. TSA > FSM > TPP
- b. TSA > TPP > FSM
- c. **TPP > TSA > FSM**
- d. TPP > FSM > TSA

CEE 123 Quiz 1
Transportation Systems Analysis

6. Question 120-09 (1 point)
 Which response correctly labels the boxes in the figure ?
- Box A is volume and Box B is level-of-service
 - Box A is level of service and Box B is volume
 - Box A is Demand Function and Box B is Performance
 - Box A is Performance and Box B is Demand Function



CEE 123 Quiz Master
Transportation Systems Analysis

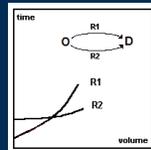
7. Question 121-01 (1 point)
 Which statement best describes travel demand?
- The traffic volume on a specific link at a specific time
 - A network's equilibrated volume and level-of-service
 - A general relationship representing volume as a function of level-of-service and activity system attributes
 - None of the above

CEE 123 Quiz Master
Transportation Systems Analysis

8. Question 122-03 (1 point)
 Performance functions relate Level-of-Service to:
- Characteristics of the Activity System A
 - Characteristics of the Transportation System T
 - Travel budget constraints
 - All of the above

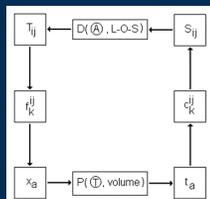
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Transportation Systems Analysis

9. Question 124-04 (1 point)
 When combining two links in parallel:
- the volume on each link is always half the OD volume
 - The OD travel time is the sum of link times
 - The combined performance function is the sum of the individual link functions over the volume axis
 - All of the above



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Transportation Systems Analysis

10. Question 125-01 (1 point)
 In Manheim's transportation system equilibration (below), where does path finding occur?
- On the right-hand side
 - In the top level
 - On the left-hand side
 - In the bottom level



CEE 123 Quiz Master
TSA: Paths

11. Question 128-03 (1 point)
 Summing travel times or other link characteristics along a designated path is known as:
- Coding
 - Loading
 - Skimming
 - Cutting