002603

May 2024

B.Tech. (Civil) VI Semester

Traffic Analysis and Transportation Planning

(PEC-CED-301-2)

Time : 3 Hours] [Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*

2. *Answer any four questions from Part-B in detail.*

3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART–A

1. (a) Define the scope of the transportation planning process. (1.5)

   (b) Define the term "sample size" in the context of transportation surveys. (1.5)

   (c) List the factors influencing mode choice in modal split analysis. (1.5)

   (d) What are the types of trip generation? (1.5)

   (e) Discuss gravity model. (1.5)

   (f) What is the gravity model in trip distribution? (1.5)

(g) What is meant by capacity restraint assignment?
(1.5)

(h) Define zoning in transportation survey? (1.5)

(i) List the inventories of transport facilities. (1.5)

(j) What is all-or-nothing assignment? (1.5)

PART–B

2. Compare and contrast long-term and short-term approaches in transportation planning. Provide examples of each approach and discuss their respective advantages and limitations. (15)

3. (a) Discuss the process and importance of home interview surveys in transportation planning. (5)

(b) Explain the concept of an external cordon line in transportation surveys. Discuss its relevance and application in transportation planning studies. (10)

4. Define disaggregate mode choice models in transportation planning. Discuss the key components and variables considered in these models, and their significance in predicting mode choice behaviour. (15)

5. (a) Elaborate on the systems approach to transportation planning. Discuss its principles and how they guide the planning process. (7)

(b) Provide examples of how the systems approach can be applied in both long-term and short-term transportation planning scenarios. (8)

6. (a) Discuss the significance of land use inventory in transportation planning surveys. How does it influence transportation network design? (7)

(b) Explain the importance of considering economic activities in transportation planning surveys. How do they impact travel patterns and demand? (8)

7. Discuss the factors influencing trip generation in transportation planning. How can multiple regression analysis be applied to understand these factors? (15)

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