

C 60533



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Name.....

Reg. No.....

**EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, APRIL 2014**

(2009 Scheme)

CE 09 803 L16—URBAN TRANSPORTATION PLANNING

Time : Three Hours

Maximum : 70 Marks

Draw diagrams wherever necessary.

Part A

Answer all questions.

1. What are the various types of transportation problems that are handled at urban levels of transportation planning ?
2. Distinguish between capacity restrained assignment and proportional assignment.
3. Discuss the application of Intervening opportunity models.
4. What are the factors to be considered in the selection of external Cordons ?
5. What are the assumptions made in Category analysis.

(5 × 2 = 10 marks)

Part B

Answer all questions.

6. Discuss the assumption made in the quantification of travel demand using Consumer demand theory.
7. Discuss how you will evaluate the accuracy of the survey data and expand the sample data so as to represent the whole population.
8. Identify and discuss the factors that affect mode choice in an urban area.
9. Discuss the advantages and limitations of various Growth factor models.
10. Explain the four basic movements to be considered while collecting travel pattern data.
11. What are the drawbacks of all-or nothing assignment techniques ?

(4 × 5 = 20 marks)

Turn over

Part C*Answer all questions.*

12. (a) With the help of a flow chart explain the sequential travel demand modelling process. How is it different from simultaneous process ?

Or

- (b) Explain the assumptions made in quantification of travel demand using consumer travel behaviour. Derive an expression for travel demand in this frame work.

13. (a) The following is the average trips made in an urban area :

Household size	...	2	3	4	5	6
Trips per day	...	1	2	3	4	5

Develop a trip generation equation for the area and calculate all statistics.

(The value of t for 3 degree of freedom at 5% level of significance is 2.533)

Or

- (b) Discuss the major consideration in defining the study area of a transport planning scheme for a city. Also explain Zoning and coding procedures.

14. (a) What is the concept behind Gravity model ? Explain the step by step procedure for the calibration of Gravity model.

Or

- (b) An urban area consisting of three zones has the following data using Average Factor method , find the number of trip interchange in horizon year. Perform one iteration :

Origin	Destination			Growth factor
	1	2	3	
1	80	120	220	1
2	120	40	320	3
3	220	320	40	4

15. (a) The calibrated utility for travel in a medium sized city by automobile and bus are given by $U = a - 0.002 x_1 - 0.05 x_2$

Where x_1 cost travel in Rs. and x_2 travel time in minutes.

Calculate the mode split for the given values

Mode	a	x_1	x_2
Automobile	- 0.3	130	25
Bus	- 0.35	75	35

Or

- (b) Compare trip interchange and trip end mode split models using flow charts.

(4 × 10 = 40 marks)