Higher Technological Institute (CT 253) Transportation Planning and Traffic Engineering   10ᵀᴴ OF RAMADAN CITY

Civil Engineering Department   Spring (2019)

Dr. Mohamed Reda   Assignment No. (1)

Trip Generation

Trip Distribution

Traffic assignment

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Question 1

- State briefly the important stages of the transport planning process?
- What are the factors governing trip generation
- What are the main advantages and disadvantages of using growth factor methods in trip distribution?
- What are the main assumptions of the gravity model?

Question 2

When surveying a study area consisting of 5 zones, the following information about the number of trips and total population in each zone were got.

Zone	1	2	3	4	5
No of Trips (y)	2000	3000	7000	8000	11000
Pop (x)	10000	20000	30000	40000	50000

A) Develop the regression model $y = a + bx$ and draw the graph showing the model.

B) Discuss the developed model, stating your judgment supported by statistical calculations?

C) Calculate number of generated trips if the population=150000 person

Question 3

In a transportation study for a city consists of 4 zones, the number of generated trips in these zones were estimated. The following table illustrates the total number of generated and attracted trips for all zones in the next year.

Zones	1	2	3	4
Generated trips	2100	1400	1700	1900
Attracted trips	1600	1900	2300	1900

The following table shows the trip distribution matrix in the base year.

O-D	1	2	3	4
1	0	400	400	300
2	300	0	300	300
3	400	300	0	600
4	300	100	300	0

Using the uniform and average factor methods: find the trip distribution matrix in the next year

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Question 4

The figure shows a transportation network connects three zones where the traffic volumes between these zones are: T23 = 0, T13 = 2500vph, T12 = 3500 vph. The free time and directions of the motion for all junction are illustrated on the figure, determine the traffic volume for each junction