

GUJARAT TECHNOLOGICAL UNIVERSITY**M.E –Ist SEMESTER–EXAMINATION – JULY- 2012****Subject code: 711301N****Date: 05/07/2012****Subject Name: Urban Transportation Systems Planning****Time: 2:30 pm – 05:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) What are the objectives of transportation planning? Discuss with flow chart various steps involved in transportation planning process. **07**

(b) Explain the sequential and non-sequential approach for travel demand forecasting. **07**

Q.2 (a) What is meant by co-ordination in transportation? Enlist various methods of co-ordination. Explain any one briefly. **07**

(b) Briefly describe different types of urban mass transportation systems with their capacities, advantages and limitations. **07**

OR

(b) What is demand responsive transportation system? State its advantages and disadvantages. **07**

Q.3 (a) Explain category analysis method for trip generation analysis. **07**

(b) What is trip assignment? Enlist various methods of trip assignment? Explain minimum path with capacity restraint. **07**

OR

Q.3 (a) What is modal split? Describe the factors affecting modal split. **07**

(b) Discuss the merits and limitations of i) Growth factor models and ii) Gravity model for the trip distribution analysis. **07**

Q.4 (a) List out various methods of trip distribution analysis. Explain Fratar method. Explain why it is more reliable as compared to other growth factor methods. **07**

(b) The following data is collected for a town: **07**

Zone	1	2	3	4	5	6
Population in the zone (thousands)	25	19	29	24	18	22
Total Trips Generated	1500	1200	1800	1300	1400	1500

Develop a linear regression model for trips generated from a zone. If the population in a particular zone increases to 45300, predict the expected trip generation from that zone.

OR

Q.4 (a) Explain Trip-interchange type modal split with an example of Toronto model. How would you use diversion curves for modal split analysis? **07**

- Q.4 (b)** The total trip volumes from zone A to B are 27000. Find the volumes on each route, connecting the two zones using the particulars given in the table below by TRC trip assignment. **07**

Route No.	Length (miles)	Speed (miles/hr)
1	2.4	36
2	1.5	25
3	1.2	10
4	3.2	24
5	3.6	30

- Q.5 (a)** Explain the significance of land use planning in transportation. Discuss with a neat flow diagram 'Lowry Land Use Model'. **07**

- (b)** Write a note on modeling urban goods movement demand. **07**

OR

- Q.5 (a)** Explain, with the aid of a sketch, the process of land-use transport interaction. **07**

- (b)** Write short note on Transportation impact study **07**

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