

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – I • EXAMINATION – WINTER • 2014

Subject code: 711301

Date: 01-12-2014

Subject Name: Urban Transportation System Planning

Time: 02:30 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) Explain urban transportation system planning process with flow chart. 07
(b) Discuss about urban goods movement with their characteristics and problems. 07
- Q-2 (a) Discuss about various types of co-ordination in mass transportation systems. 07
(b) Differentiate between private and public transport in urban area. 07
- OR
- (b) What are the strategies for the evaluation of alternate transportation plan? 07
- Q-3 (a) Write sampling size for home interview survey. Explain expansion of data from survey. 07
(b) Explain types of planning methodologies. 07
- OR
- Q-3 (a) Discuss about travel demand and travel forecasting process. 07
(b) Explain network assignment methods with suitable example. 07
- Q-4 (a) Develop trip generation equation using regression analysis for the following data: 07

No. of family members working in Household	2	3	4	5	6
Number of trips per day	5	7	8	10	10

Also calculate relevant statistics to check the validity of the developed equation.

- (b) The present trips generated and attracted by the zones A,B,C and future forecasting are as obtained in trip generation analysis are as shown in table below: 07

	Zones	A	B	C
Present trips	Produced	300	100	150
	Attracted	150	150	250
Future trips	Produced	500	200	350
	Attracted	300	350	400

Calculate trip distribution using Fratar's method for future. Note that derive only first iteration.

OR

- Q-4 (a) A town is divided into four residential zones A,B,C,D and two industrial zones P & Q. Trip generation in each residential zone is as shown in table below: 07

Residential Zones	A	B	C	D
Trips	1200	2500	1500	3000

Industrial Zones	P	Q
Number of jobs	4000	4400

Attraction between zones is inversely proportional to the square of the journey times between zones. The journey times in min. from home to work are as shown in table below:

Zone	P	Q
A	25	20
B	25	14
C	12	14
D	18	22

- Calculate trip distribution matrix using Gravity model. Note that do not follow iterative procedure for balancing total attracted trips.
- (b) Discuss about the factors affecting modal split. 07
- Q.5 (a) Discuss about rail based urban mass rapid transit system with their types, characteristics, advantages and disadvantages. 07
- (b) Discuss about landuse transport models with their suitability. 07

OR

- Q.5 (a) Discuss about road based urban mass rapid transit system with their types, characteristics, advantages and disadvantages. 07
- (b) i. What is para transit transport? 03
- ii. What are the two basic approaches for developing models for trip generation? 04
