

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VII • EXAMINATION – SUMMER • 2014****Subject Code: 170604****Date: 31-05-2014****Subject Name: Urban Transportation System****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) What is the necessity of transportation planning at national, regional and urban level. **07**  
Describe in detail urban transport planning process.

(b) Define the terms :- (i) Trip (ii) mobility (iii) Accessibility (iv) Horizon year **07**  
(v) Base year (vi) Origin & destination (vii) Travel forecasting.

**Q.2** (a) What are the roles of transportation in society? describe economic and social role of transportation. **07**

(b) Explain with flow diagram four stages of travel demand forecasting. **07**

**OR**

(b) Describe the various types of transportation surveys to be carried out for planning process. **07**

**Q.3** (a) Describe the factors affecting trip generation and attraction rates **07**

(b) What are the major determinants of public transport. **07**

**OR**

**Q.3** The following information was collected during transportation survey of study Area. **14**

Travel zone	Population ( in thousands)	Total trips generated ( in hundreds)
1	25.8	12.2
2	28.0	11
3	30.8	16.8
4	33	15
5	22	12
6	29.8	14.8
7	20	9.2
8	24.6	12.8

Develop linear regression model for estimating the trips generated from zone if The population of particular zone may increase 40000 predict trips for that zone.

**Q.4** (a) Enlist different growth factor models for trip distribution, explain in detail any one. **07**

(b) Describe gravity model with formula showing each parameters. **07**

**OR**

**Q.4** A Study area has been divided in to four zones 1, 2, 3 and 4. The present trips and growth factor is given in the following table and total trip produce and attracted. Develop future trip distribution matrix by fratar method. **14**

<b>O \ D</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>G F</b>
<b>1</b>	-	105	205	95	2.9
<b>2</b>	100	-	580	290	3.8
<b>3</b>	210	600	-	790	2.1
<b>4</b>	105	300	800	-	2.1
<b>G F</b>	2.9	3.8	2.1	2.1	-

- Q.5** (a) What are the general principles of Traffic assignment. **07**  
(b) Explain by drawing sketch concept of screen line survey and Cordon line survey of study area. **07**
- OR**
- Q.5** (a) Explain by drawing sketch point segment and corridor model. **07**  
(b) Give classification of urban mass transit system. **07**

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