Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII • EXAMINATION – WINTER • 2014

Subject Code: 170604   **Date: 29-11-2014**
Subject Name: Urban Transportation System
Time: 10:30 am - 01:00 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 factors affecting travel demand? Explain sequential model in travel demand. **07**

(b) Define the terms: **07**
1. Base year   2. Travel forecasting   3. Expansion factor
4. Urban forms and structures   5. Mass transit system   6. Metropolitan city.

Q.2 **(a)** Explain the procedure to conduct home interview survey with definition of study area and sampling technique. **07**

(b) Write about characteristics, capacity and route planning of Bus Mass Transit System. **07**

OR

(b) What is Modal split? Discuss factors affecting modal split. **07**

Q.3 **(a)** The table below shows present trip distribution matrix. **07**

O/D	1	2	3	4	5	6
1	-	80	-	75	-	-
2	-	-	60	-	60	-
3	-	-	-	55	-	90
4	-	-	-	-	85	-
5	-	-	-	-	-	70
6	65	-	-	-	-	-

By using Average growth factor method distribute the trips to various zones for horizon year. Growth factor for each zone is given for the horizon year after 10 years.

F1=1.2	F2=2.0	F3=1.8
F4=1.6	F5=1.4	F6=1.8

(b) What is trip generation? What are the methods for trip generation? Explain zonal regression analysis in detail. **07**

OR

Q.3 **(a)** What is route assignment? Write the factors affecting route choice. Explain All or Nothing assignment technique. **07**

(b) The trip distribution matrix for design year for 4 zones of a study area is as below: **07**

O/D	1	2	3	4
1	-	1500	400	2000
2	300	-	450	480
3	400	1200	-	1420
4	200	250	430	-

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The modal split analysis between private vehicle and public transport vehicle is 60/40 as an overall split. The peak period vehicle occupancy is 1.8 persons for private vehicle CAR and 50 persons for public transport vehicle BUS.

Develop the trip matrix for both modes showing car trips and bus trips in design year.

Q.4	**(a)**	Discuss about various checks carried out for data collected for planning of transportation facility.	**07**
	(b)	What are the types of trip observed in Urban transportation system?	**07**

OR

Q.4	**(a)**	Explain the method of public transport survey with the types of data collected in the survey.	**07**
	(b)	Define Urban area. What are the trends in urbanization? Write about urban class groups.	**07**

Q.5	**(a)**	Explain corridor with sketch showing various corridor components. Also, write about corridor screen line analysis.	**07**
	(b)	Discuss about transportation plan preparation.	**07**

OR

Q.5	**(a)**	Explain Point, Linear, Radial and Polynuclear developments with sketch.	**07**
	(b)	Write about characteristics of Rail transit. Also, write about capacity, fare structure and route planning for rail transit in brief.	**07**

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