Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER–VIII • EXAMINATION – SUMMER • 2014

Subject Code: X 80603 **Date: 31-05-2014**

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 functions of Transportation? Explain briefly. **07**

(b) Enlist the various modes of Transportation system. Compare it in terms of attributes. **07**

Q.2 **(a)** Explain the necessity of Transportation planning. **07**

(b) Define - Trip, Growth Factor, Desire line, Through trips, Cordon line, Trip distribution, Trip assignment **07**

OR

(b) Explain Zonal regression analysis method. **07**

Q.3 **(a)** Develop the trip generation models for two independent variables from the following data: **07**

Income in thousand	Persons in household	Trips per day
30	2	2
50	2	2
70	4	4
90	6	6
110	7	4
130	8	5
150	9	5

(b) Describe the Gravity model with its utility. **07**

OR

Q.3 **(a)** A study area has been divided in Zone A, B, C and D. The result of the trip generation and trip distribution matrix is given below. **07**

Description		A	B	C	D
Produced trips	Present	130	160	220	90
	Future	350	180	300	290
Attracted trips	Present	180	80	170	170
	Future	280	300	250	290

Trip distribution matrix (present)

Destination Origin	A	B	C	D
A	30	30	40	30
B	50	20	50	40
C	80	20	60	60
D	20	10	20	40

Develop the future distribution of trip matrix using

(a) Uniform growth factor method

(b) Detroit method

(b) What are the factors affecting individuals choice of travel mode? **07**

Q.4 **(a)** Develop the trip matrixes for the car, bus and total vehicular trips from the following data. **07**

Destination Origin	A	B	C	D
A	---	1800	500	2200
B	500	---	470	520
C	480	1500	---	1600
D	300	400	500	---

The modal split analysis shows 55/45 for private car vs public transport as an overall split. The peak period car occupancy is 1.9 persons per car and 48 persons by bus. If the goods vehicles constitute about 20% of the person vehicle trips, calculate the total vehicle trip.

(b) Explain "All or Nothing" Assignment Method **07**

OR

Q.4 **(a)** What is corridor? Explain by drawing sketch typical corridor components. **07**

(b) Explain private travel and para transit. **07**

Q.5 **(a)** Compare Trip end modal split and Trip interchange modal split **07**

(b) Describe briefly corridor identification and corridor screen line analysis **07**

OR

Q.5 **(a)** Write a short note on "Rail Based transit system" **07**

(b) Explain the advantages and limitations of Growth Factor methods. **07**

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