

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
PDDC - SEMESTER-VIII • EXAMINATION – SUMMER 2013

Subject Code: X80603**Date: 15-05-2013****Subject Name: Urban Transportation System****Time: 10.30 pm - 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 levels of Urban Transport Planning? Explain with diagram. **07**
(b) Define – Zone, Inter zonal trip, Trip distribution, Trip generation, Cordon line, Horizon year, Home based trip. **07**

- Q.2 (a)** Explain the factors affecting Trip generation and Trip attraction. **07**
(b) Develop a trip generation equation using regression equation from the following data. **07**
 Calculate the coefficient of correlation.

Average Household size	2	3	4	5	6
Average total trips per day	4	8	10	12	14

OR

- (b)** Explain the Uniform Growth Factor and Average Growth Factor method of Trip distribution. **07**
- Q.3 (a)** Distribute the trips using Furness method of trip distribution for the following data. **07**
 Carry out two iteration.

O \ D	A	B	C	D	Present Trips	Future Trips
A	-	300	200	150	650	1400
B	250	-	400	100	750	1600
C	150	350	-	200	700	1500
D	200	150	300	-	650	1200
Present trips	600	800	900	450	2750	--
Future trips	1300	1600	1700	1100	5700	--

- (b)** Write a short note on “Gravity Model” **07**

OR

- Q.3 (a)** What are the factors affecting Modal Split? Explain briefly. **07**
(b) Discuss about the Logit Models for mode choice. **07**
- Q.4 (a)** Compare the Private transport and Public transport in urban area. **07**
(b) Write a short note on “BRTS” **07**

OR

- Q.4** (a) Write a short note on “Home Interview Survey” **07**
 (b) Define: - Corridor, Screen line, Segment capacity, Corridor analysis, Headway, Passenger capacity, Utilization. **07**
- Q.5** (a) What are the purposes of Traffic Assignment Models ? **07**
 (b) Using Gravity model analysis, find the number of trips between zones from the following data. Assume $K_{ij} = 0.9$ and exponent of travel time $n=1.9$ **07**

Trip Table

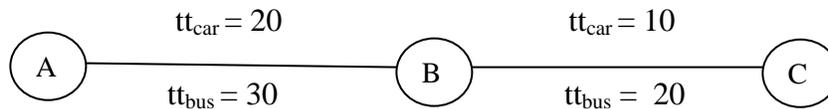
Zone No.	Trip Produced	Trips attracted
1	1000	-
2	1600	-
3	-	1400
4	-	1200

Trip Travel time (minutes)

O \ D	3	4
1	5	10
2	10	5

OR

- Q.5** (a) Compare the various modes of Transportation in terms of three basic attributes. **07**
 (b) Zone A, B, and C are connected by two roads as shown in fig. The Travel time between roads are also shown in fig. **07**



The probability of choosing the car mode is given by

$$P_{car} = \frac{1}{1 + e^{-ux}}$$

Where $ux = 0.90 - 0.08 (tt_{car} - tt_{bus})$

Total trip interchange between zones is as follows.

From	To	Persons trip per day
A	B	1000
B	A	0
A	C	600
C	A	1600
B	C	500
C	B	400

Determine the two way volume in car per day on the road A TO C if the average car occupancy is 2.2
