Q.1

Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY ME - SEMESTER- I (New course)• REMEDIAL EXAMINATION - SUMMER 2015

Subject Code: 2711301 Date 14/05/2015

50		Datt.17/03/2013	
Su	bject Name: Urban Transportation System Planning		
Ti	me: 10:30 am to 1:00 pm	Total Marks: 70	
Ins	structions:		
	1. Attempt all questions.		
	2. Make suitable assumptions wherever necessary.		
	3. Figures to the right indicate full marks.		
(a)	Explain: Urban transportation systemsøobjectives and M.O.E.	. 07	1
(b)	Compare Metro Rail Transit with Bus Rapid Transit System.	07	1
(a)	What is trip generation? What are the factors affecting it?	07	1

- Q.2 **(a)** What is trip generation? What are the factors affecting it?
 - Briefly discuss about the para-transit systems and their importance. **(b)**

OR

Develop the trip generation equation using linear regression for the following data. What would 07 (b) be the coefficient of determination?

No. of Workers in House Hold	1	2	3	4	2	5	6	3	4	1
Trips per day	3	5	6	7	4	10	12	7	9	2

- Explain briefly Gravity model with its limitations and advantages for trip distribution analysis. 07 **Q.3 (a)**
 - A study area has been divided in three zones A, B, C. The present trip distribution matrix is 07 **(b)** given with future total trip productions and trip attractions. Develop the future trip distribution matrix using average growth factor method.

	D	Α	В	С	Total	present	Total	future
0					production		production	
А		200	250	150	600		900	
В		250	100	300	650		1000	
С		350	150	200	700		1200	
Total	present	800	500	650	1950		-	
attractio	on							
Total	future	1300	800	1000	-		3100	
attractio	on							
OR								

Do iteration process up to 1 stage

- What are the factors affecting individuals choice of the travel mode? Briefly discuss about 07 0.3 **(a)** Logit models for modal split analysis. 07
 - (b) Explain trip-interchange type of mode choice model.
- (a) What is the importance of route assignment in travel demand modeling? What is All-or-Q.4 07 nothingøassignment? 07
 - (b) Explain TRC trip assignment model procedure.

OR

(a) Explain Lowryøs land use model. **Q.4**

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(b) A small 3 zone city has following data:

Zone	Total existing population	Holding capacity (acres)				
1	2000	300				
2	3000	200				
3	4000	100				

The travel times (minutes) are given in following table

	D	1	2	3
0				
1		3	5	7
2		5	2	6
3		7	6	3

Assume travel time exponent = 2. If the population of the city is expected to rise to 15000 in future, how will the population be distributed by zone? Assume that the total employment in each zone is proportional to the total existing population in that zone.

- Q.5 (a) Explain briefly about -Urban Goods Movementø
 - (b) Explain with sketches different types of urban street networks.

OR

- Q.5 (a)Define the following terms and show them on a sketch of study area.07(i) Cordon line, (ii) Zones, (iii) Centroid of zone, (iv) Intra-zonal trip, (v) Inter-zonal trip,
(vi) Screen line, (vii) Desire line.07
 - (b) How will you evaluate the existing mass transportation system? What will you suggest to 07 improve the ridership in the mass transportation system?

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