Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – SUMMER 2015

Subject Code: 170604 **Date: 04/12/2015**

Subject Name: Urban Transportation System

Time:10:30 am to 1:00 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)** Explain in detail role of transportation at national, regional and urban level. **07**

(b) Discuss about different levels of urban transportation planning studies. **07**

Q.2 **(a)** Explain the procedure to conduct home interview survey. Also write what data should be collected during that survey. **07**

(b) How you check different survey data? Explain survey data check methods. **07**

OR

(b) Explain about zoning. How you do network identification and coding. **07**

Q.3 **(a)** The table shows data for vehicle trips per day, as related to income and persons in house hold, for one zone of the study area. Develop the two linear regression equations for trip generation. **07**

Income (Thousands of units)	Persons in House hold	Trips per day
40	2	2
110	6	5
140	8	5
220	4	3
240	11	6

(b) Enlist the various growth factor models and explain each model in brief. **07**

OR

Q.3 **(a)** The total trips production in and attracted to the three zones 1,2 and 3 of a survey area in the design year are tabulated as: **07**

Zones	Trips Produced	Trips Attracted
1	2000	3000
2	3000	4000
3	4000	2000

It is known that the trips between two zones are inversely proportional to the second power of the travel time between zones, which is uniformly 30 minutes. If the trip interchanges between zones 2 and 3 is known to be 800, calculate the trip interchange between zones 1 to 2, 1 to 3, 2 to 1, 3 to 1 and 3 to 2.

(b) Explain various factors governing trip generation. **07**

Q.4 **(a)** Obtain the future O-D matrix from the given data using average growth factor method. Find growth factor for given zone. Solve the example up to two iteration. **07**

D / O	1	2	3	Present production	Future Production
1	60	100	200	360	360
2	100	20	300	420	1260
3	200	300	20	520	3120
Present attraction	360	420	520		
Future attraction	360	1260	3120		

(b) Define modal split. Explain about probit and logit techniques of modal split. **07**

OR

Q.4 **(a)** Compare trip end models and trip interchange models in the modal split analysis. **07**

(b) Discuss all or nothing traffic assignment techniques with their limitation. How this method is different with multiple route assignment technique? **07**

Q.5 **(a)** Explain about point, segment, segment capacity and screen line with neat sketches. **07**

(b) Brief discuss about bus rapid transit system. **07**

OR

Q.5 **(a)** Explain about urban form and structures with neat sketches. **07**

(b) Why traffic system management plans is necessary? What point should be keep in mind to prepare that plan? **07**

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