Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. SEMESTER I (old course)–EXAMINATION (Remedial) – WINTER 2015

Subject code: 711301 **Date: 08/12/2015**

Subject Name: Urban Transportation System Planning

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 by drawing flow diagram an overview of ótransportation planning process ó **07**

(b) Define:- (i) Base year (ii) Horizon year (iii) Ubiquity (iv) Mobility (v) Spatial organization(vi)Ambience (vii) links **07**

Q.2 **(a)** Explain with all parameters Density saturation gradients **07**

(b) What are the methods of trip generations, explain in detail any one **07**

OR

(b) A land use zone consists of 2000 single family homes, 520 apartment units And three hotels with 600 rooms each,calculate the daily vehicular traffic Generated by this zone by using following equations $T_s=5+7.35U_s$, $T_a=7+6.25U_a$ and $T_h=2+12U_h$ here subscripts s, a and h refers Home apartment and hotel **07**

Q.3 **(a)** Explain the opportunity model for trip distribution analysis **07**

(b) What are the factors responsible for trip generation **07**

OR

Q.3 A four zone city with following characteristics **14**

Zone	population	Holding capacity (In acres)
1	3000	300
2	2500	280
3	8900	495
4	4550	355

Travel time in minutes is given below and an exponent of 2.1 can be assumed Based on work done on other cities of same size if the city is likely to grow By 15% overall in 15 years what would be likely population located in each zone in horizon year

Travel time (in minutes) is given below

From i\ toj	1	2	3	4
1	05	10	12	15
2	10	04	09	20
3	12	0 9	03	14
4	15	20	14	06

Q.4 **(a)** Explain the trip end models and trip interchange models **07**

(b) Data fo rshopping trips to shopping sites in various parts of city are recorded As given below. Calculate shopping trip rates by location type **07**

Zones	location	no. of employees.	No.of shopping trips
1	CBD	3000	7200
2	CBD	1400	2500
3	shopping centre1	3000	6000
4	shopping centre2	1400	2500
5	local centre	15	50
6	local centre	50	140
7	local centre	85	300
8	local centre	105	380

OR

Q.4 **(a)** Describe different mass-transit systems for urban transport. **07**

(b) Enlist the trip-assignments techniques explain in detail any one. **07**

Q.5 **(a)** Explain Lowry model for urban land use **07**

(b) Explain characteristics of urban goods movements **07**

OR

Q.5 **(a)** Give classification of urban roads also draw the sketch. **07**

(b) Explain by giving formula Gravity-model for trip distribution **07**

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