Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (OLD) - EXAMINATION – SUMMER 2017

Subject Code: 170604 **Date: 29/04/2017**

Subject Name: Urban Transportation System (Department Elective-I)

Time: 02:30 PM to 05:00 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)** Enlist the roles of transportation in society and explain economic and social role of transportation. **07**

(b) Which are the objective and goals of transportation planning?. **07**

Q.2 **(a)** Classify the urban roads and explain with sketch rectangular and circular road pattern. **07**

(b) What is human settlements? Classify the human settlement and explain each of them. **07**

OR

(b) Why urbanization takes place? What are the impacts of it? **07**

Q.3 **(a)** What are the factors affecting the travel demand? Explain each of them in detail. **07**

(b) What are the aggregate and disaggregate approaches to travel demand? Mention advantages of disaggregate approach. **07**

OR

Q.3 **(a)** What is study area? What factors should be given due weightage in the selection of external cordon? **07**

(b) What are the survey data checks? Explain accuracy check in detail. **07**

Q.4 **(a)** What are the factors affecting trip generation and attraction rates? **07**

(b) Develop the trip generation equation using regression analysis for the following data and compute the co efficient of co-relation. **07**

Income of H H (in 1000)	5	20	8	12	30	36	10
Trip per day.	12	10	14	10	15	12	14

OR

Q.4 **(a)** Enlist the methods of trip distribution and explain uniform growth factor method in detail. **07**

(b) The distribution of present trips among the A, B and C zones are given in O-D matrix below. The future trips generated (Ti) are also given in last column of this table. Calculate the future trips among the zones using uniform growth factor method. **07**

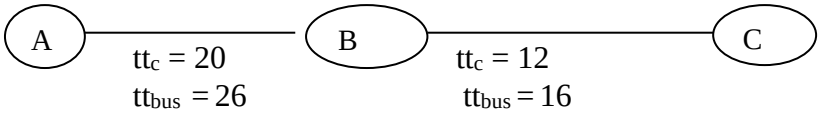
D / O	A	B	C	Ti
A	70	110	220	380
B	120	30	330	1400
C	210	330	30	3200

Q.5 **(a)** Write short note on **07**

1) All or nothing assignment method.
2) Diversion curve method.

(b) Zones A, B and C are connected by two lane road as shown in fig. below with travel time by bus and travel time by car. The probability Pc of choosing the car mode is found to be given by $Pc = 1/1+e^{-u(x)}$. **07**

Where $u(x) = 0.85 – 0.06(tt_c - tt_{bus})$



The total trip interchange between zones are as follows.

From	To	Person trip per day
A	B	1200
B	A	200
A	C	600
C	A	2000
B	C	600
C	B	700

Determine the 2 way volume in car per day on the road AC if av. Car occupancy is 3.

OR

Q.5 **(a)** What is corridor? Explain by drawing sketch tropical corridor components. **07**

(b) What is BRTS system? Write advantage and disadvantage of it? **07**

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