

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**

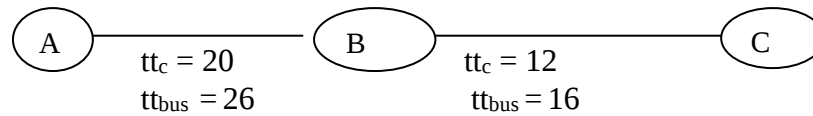
Income of H H (in 1000)	5	20	8	12	30	36	10
Trip per day.	12	10	14	10	15	12	14

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**

O \ D	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 **07**
travel time by bus and travel time by car. The probability P_c of choosing the car mode is found to be given by $P_c = 1/(1 + e^{-u(x)})$.
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**
