

**GUJARAT TECHNOLOGICAL UNIVERSITY****PDDC - SEMESTER- VIII • EXAMINATION – SUMMER 2017****Subject code: X80603****Date: 03/05/2017****Subject Name: Urban Transportation System****Time: 10.30AM to 01.00PM****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) What is Transportation Planning? Which are the objectives and goals of the transportation planning? 07
- (b) Describe the basic structure of transportation systems(an overview) 07
- Q-2 (a) Define with neat sketch(whenever applicable) 07
- (i) Interzonal trips (ii) Land use (iii) Desire line
- (iv) Base year (v) Horizon year (vi) Study area(vii) CBD
- (b) Explain a flow diagram “ Transportation Planning Process” with sketch. 07

**OR**

- (b) Explain the procedure to conduct home interview survey. Also write what data should be collected during that survey. 07
- Q-3 (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 upto two iteration. 07

<b>O</b>	<b>D</b>				$\Sigma$ Present Prod.	$\Sigma$ Future Prod.
<b>1</b>	120	170	220	510	700	
<b>2</b>	180	190	300	670	800	
<b>3</b>	210	310	200	720	900	
$\Sigma$ Present Attr.	510	670	720			
$\Sigma$ Future Attr.	700	800	900			

- (b) Explain with an example category analysis for trip generation analysis. 07

**OR**

- Q-3 (a) The following information was collected during survey of city having 7 zones 07

<b>Zone</b>	<b>Population(1000s)</b>	<b>Trips per day(100s)</b>
1	24	14
2	26	19
3	33	17
4	39	10
5	21	12
6	30	13
7	32	15

Develop a linear regression model for trips generated from a zone.

- (b) i. What are the factors influencing on individual choice of travel mode 03
- ii. Describe in brief trip inter change and trip end model. 04
- Q-4 (a) A town consists of four residential areas A, B, C and D and two employment producing nodes X & Y. Trip generation equation shows that for design year in equation trips from 07

residence to work in a day are as follows :

Zone	Trips produced
A	1000
B	2250
C	1750
D	3200

There are 3700 jobs in node X and 4500 jobs in node Y. It is known that attraction between zones is inversely proportional square of journey time between zones. The journey time from home to work is given as follows (time in minutes).

Zone	X	Y
A	15	20
B	15	10
C	10	10
D	15	20

Calculate and tabulate inter zonal trips using Gravity Model from home to work.

- (b) Define modal split. Describe methods of modal split with its advantages and disadvantages. 07
- OR**
- Q-4 (a) What is the necessity of traffic assignment? Enlist methods, describe in detail any one. 07
- (b) Explain corridor identification and corridor traffic forecasting. 07
- Q-5 (a) Discuss about transportation plan preparation. 07
- (b) Give classification of urban mass transit system. 07
- OR**
- Q-5 (a) Write a short note on Traffic System Management (TSM). 07
- (b) Enlist different types of Urban forms and structures and explain any *two* with neat sketch. 07

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