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## **GUJARAT TECHNOLOGICAL UNIVERSITY** PDDC - SEMESTER-VIII • EXAMINATION – SUMMER • 2015

Subject Code: X80603Date: 13/05/2015Subject Name: Urban Transportation System (Dept. Elective – II)Time:10:30 am - 01:00 pmInstructions:

- structions:
  - 1. Attempt all questions.
  - 2. Make suitable assumptions wherever necessary.
  - 3. Figures to the right indicate full marks.
- Q.1 (a) What are the factors affecting travel demand in urban area? Discuss in detail.
  (b) Give hierarchy of urban class groups; enlist the cities in India having population more than 1 million.
  07
- **Q.2** (a) Explain in detail study area, zoning and cordon lines 07
  - (b) Explain by drawing flow diagram of system approach for transportation planning 07 stages.

## OR

- (b) Explain "linear regression analysis" for trip generation.
- Q.3 Develop the trip production equation and calculate multiplying, additive constant 14 and <sup>®</sup> coefficient of correlation.

Average household size	2	3	4	5	6
Average total trips per day	5	6	8	11	12

## OR

- **Q.3** (a) Describe the inventory of transport facilities at urban level.
  - (b) Give the formula for Uniform growth factor and average growth factor. Explain 07 each parameter.
- **Q.4** (a) What are the factors affecting modal split?
  - (b) The design year total person trips between 4 zones distributed is given in table. The modal spilt analysis shows 30/70 for private car vs public transport as an overall split. The peak period car occupancies is 2 persons and 50 persons per bus. Develop the trip matrices for 2 modes and total vehicular trips. If the goods vehicle contributes 18 % of person vehicle, calculate the total trips.

D	А	В	С	D
0				
А		1800	600	2200
В	500		650	580
С	600	1400		1620
D	400	350	630	

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Q.4 A study area has been divided in four zones A, B, C and D. The result of trip 14 generation analysis and present trips, distribution matrix is shown in the table.

0	-					
D	Α	В	С	D	Present trips	Future trips
0					tij	Tij
А	40	40	40	30	150	300
В	20	20	30	20	90	170
С	40	30	50	60	180	270
D	20	10	30	20	80	240
Trip	120	100	150	130	-	-
produced						
Future trips	180	300	300	200	-	-

Develop the future trip distribution matrix by average growth factor and Detroit method.

Q.5	<b>(a)</b>	What are the methods for checking the survey data? Explain accuracy check.	07
	<b>(b)</b>	Explain by drawing sketch point segment and corridor model.	07

## OR

Q.5	<b>(a)</b>	Explain the gravity model by giving formula.	07
	<b>(b)</b>	Give the classification of urban mass rapid transit system.	07

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