Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME SEMESTER II EXAMINATION – SUMMER 2017

Subject Code: 2721303 **Date: 29/05/2017**

Subject Name: Regional and Mass Transportation System Planning

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)** Explain the importance of Regional Transportation Planning (RTP). What are the goals and constraints of RTP? **07**

(b) Discuss Concentric ring and Growth pole theories of regional planning. **07**

Q.2 **(a)** Briefly explain various factors affecting the population growth. **07**

(b) Explain the road development in India after 2001. **07**

OR

(b) Discuss about the PMGSY of India. **07**

Q.3 **(a)** Forecast the population for the year of 2031 from the following data of a region using Incremental Increase and Geometrical Increase (by arithmetic average) method. **07**

Year	1951	1961	1971	1981	1991	2001	2011
Population	67,320	76,670	88,150	1,04,380	1,18,460	1,30,810	1,42,450

(b) Briefly discuss about criteria for rural spatial structure. **07**

OR

Q.3 **(a)** For a given area, combined survival and birth rate matrix for 5 age groups is given below as G. The population of the same 5 age groups at time *t* is given below in matrix P_t. Compute the population matrix P_{t+3} for the time *t+3*. **07**

$$G = \begin{pmatrix} 0 & 0.8 & 0.6 & 0 & 0 \\ 0.8 & 0 & 0 & 0 & 0 \\ 0 & 0.8 & 0 & 0 & 0 \\ 0 & 0 & 0.7 & 0 & 0 \\ 0 & 0 & 0 & 0.6 & 0 \end{pmatrix} \qquad P_t = \begin{pmatrix} 2000 \\ 1500 \\ 1000 \\ 800 \\ 500 \end{pmatrix}$$

(b) Briefly explain accessibility theory and location theory for rural planning. **07**

Q.4 **(a)** Explain Lowry's derivative Land Use model. **07**

(b) Describe the importance of developing 'Vehicle ownership model'. Briefly discuss any two methods of forecasting vehicle growth rate. **07**

OR

Q.4 **(a)** Explain Density-Saturation Gradient model. **07**

(b) Briefly describe the 'Delineation criteria' for transport network planning. **07**

Q.5 **(a)** Explain with sketch OSI and TRAIL layer model used in regional transportation development. **07**

(b) Describe the problems faced by and created by goods traffic in regional transportation. How will you tackle these problems? **07**

OR

Q.5	**(a)**	Explain the 'Rapid Transit System' network design procedure.	**07**
	(b)	What are the properties of a good schedule of transit system? How will you determine the schedule of a single-route transit system?	**07**

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