Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E -IVth SEMESTER–EXAMINATION – MAY- 2012

Subject code: 741901 **Date: 12/05/2012**

Subject Name: Multimodal Transportation System Planning and Management

Time: 02:30 pm – 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)**	Describe basic characteristics of right of way, technology and service types used to define transit modes.	**07**
	(b)	Describe the public transport modes in Indian cities. What is the efficiency of public transport modes in Indian cities?	**07**
Q.2	**(a)**	Explain the objectives of National Urban Transport Policy (NUTP), 2006: "Enabling the establishment of quality focused Multimodal Public Transportation System that is well integrated, providing seamless travel across the modes".	**07**
	(b)	Explain integration of mode with reference to network integration, physical integration, operational integration, financial integration and institutional integration for multimodal transportation system.	**07**
		OR	
	(b)	Explain Master plan for Delhi 2021 with respect to integrated planning for multimodal transportation system.	**07**
Q.3	**(a)**	Define the following terms: (Any seven) Bus, Trolley Bus, Street car, Commuter transit, Van pooling, Subscription bus, Taxi, Dial- a-ride, Jitney.	**07**
	(b)	Describe advantages and disadvantages of street cars compared to regular bus service.	**07**
		OR	
Q.3	**(a)**	Write note on any two: (i)MRTS, (ii) LRT, (iii) BRTS, (iv) Monorails.	**07**
	(b)	Describe the following transit system characteristics: 1. System Performance 2. Level of Service 3. Impacts 4. Costs	**07**
Q.4	**(a)**	What is stated preference survey? What are the features of stated preference survey?	**07**
	(b)	Explain rating data, choice data and rank data.	**07**
		OR	
Q.4	**(a)**	Write detailed note on Nested Logit Model.	**07**
	(b)	Explain Non-motorized transport level of service rating factors (Indicators)for MMTS planning.	**07**
Q.5	**(a)**	Describe planning framework for MMTS.	**07**
	(b)	Describe framework for evaluation of MMTS.	**07**
		OR	

Q.5 **(a)** An urban freeway carries the following peak-hour traffic. **07**

Mode	No. of units	Occupancy/Unit
Cars	5200	1.25
Buses	35	45
Van pools	90	10

Occupancy includes drivers. Calculate the passenger flow and discuss the results. Suggest appropriate transit suitable for 15 years design life if passenger growth rate on the freeway is 12.5% per year.

(b) Decide bus fleet size from the following data: **07**

Design passenger flow= 2000 passenger/hour
Bus capacity= 50 passenger
Bus route length =12.00km
Station spacing = 800m
Maximum operating speed of the bus = 50kmph
Service acceleration and deceleration rates =1.2m/sec2
Dwell time at each station = 15 sec.
Turn about time =5 minutes.

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