Sea	at No.:	Enrolment No		
	GUJARAT TECHNOLOGICAL UNIVERSITY ME – SEMESTER III (NEW) – • EXAMINATION – SUMMER 2016			
Subject Code: 2731306 Date:0				
Subject Name: Traffic Flow Theory and Simulation Time: 10:30 am to 01:00 pm Instructions: Total			Marks: 70	
	1. 2. 3.	r and the state of		
Q.1	(a) (b)	Write a note on Greenberg's logarithmic model. Compare fluid flow analogy with the traffic flow and state the assumptions and Limitations.	07 07	
Q.2	(a)	Briefly discuss how could you evaluate the influence of encroachment and Onstreet parking on the vehicular stream characteristic?	07	
	(b)	The off peak traffic flow arriving at random at toll booth facility is 100 vph and the peak flow is 200 vph. The service rate is exponentially distributed at the booth is 4 per minute. What is the average number of customers in the queue for each flow?	07	
		OR		
	(b)	What do you understand by Gap Acceptance? Explain the principle of gap acceptance.	07	
Q.3	(a)	Explain use of queuing theory in Transportation Engineering. What are the most common queuing models used in Transportation Engineering?	07	
	(b)	A toll booth at the entrance of expressway can handle 800 V.P.H, the time to process a vehicle being exponentially distributed. The flow is 600 V.P.H with a Poissonian arrival pattern. Determine:	07	
		(i) the average number of vehicles in the system;		
		(ii) the length of the queue;		
		(iii) the average time spent by the vehicle in the system;		
		(iv) the average time spent by the vehicle in the queue. OR		
Q.3	(a)	Write a short note on Poisson Distribution of Vehicle Arrivals.	07	
	(b)	Enlist various Models of Delay at Intersections and Pedestrian Crossings.	07	
Q.4	(a)	Describe the Demand Service Characteristics.	07	
	(b)	Write a note on Level of Service in traffic stream. Explain in detail the factors affecting LOS.	07	
		OR		
Q.4	(a)	List the factors affecting the capacity of roads? What are the capacities of various types of roads as per IRC?	07	
	(b)	Explain the influence of static and dynamic PCU in analyzing traffic stream Characteristics.	07	

Q.5	(a)	Enlist the traffic simulation software and describe the important inputs need for	07
	(b)	such simulation models also state the limitation of these software. What are the factors and limitations to simulating mix traffic of developing country?	07

OR

Q.5 (a) Write a "C" programme which generates the Random Number. 07

(b) Define Simulation and Comment on "Traffic simulation is becoming one of the necessities for Traffic Engineer in the present scenario of high volume growth".
