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GUJARAT TECHNOLOGICAL UNIVERSITY ME - SEMESTER- I (New course) • REMEDIAL EXAMINATION - SUMMER 2015 Subject Code: 2711302 Date:13/05/2015 Subject Name: Traffic Engineering Time: 10:30 am to 1:00 pm **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. 0.1 Explain different vehicle characteristics with their significance in traffic 07 (a) interaction. Explain with graphs speed-flow-density relationship for the highway traffic. **07 (b)** Q.2 (a) Define followings: AADT, AAWT, DDHV, PCU, Space Headway. 07 What are the purposes of classified traffic volume count? Explain any one **07** (b) method of it. OR What are the purposes of conducting Spot Speed study surveys? Explain any **(b) 07** one method of it. Q.3 (a) What are the applications of Travel time and Delay studies? Explain any one 07 method of it. Develop speed-density relationship from the following data. Determine (b) 07 Maximum flow, Jam density, Free flow speed, Optimum speed for maximum flow. Draw speed-flow and speed-density graphs. 30 70 80 90 Density 10 20 40 50 60 100 (vpk) Speed 88 78 72 63 60 55 43 38 31 24 (kmph) OR Q.3 Define: Delay, Fixed delay, Operational delay, Stopped delay, Travel time delay. 07 (a) From the following data of spot-speed study, draw graphs for frequency (%) ó 07 vs- Speed range and Cumulative frequency (%) - vs- Speed. Also, calculate: Modal speed, Median speed, TMS, SMS, speed to be used in geometric design, speed for traffic regulation. Speed 21-31-41-71-81-1-11-51-61range 10.9 20.9 30.9 40.9 50.9 60.9 70.9 80.9 90.9 (kmph) No. of 4 8 16 36 42 34 14 6 2 vehicles What is capacity of a highway? As per HCM how will you determine the 0.4 **07** capacity of freeway segment? What do you understand by Level of Service on highway? Explain LOS for 07 **(b)** uninterrupted flow on rural highways.

Q.4 (a) What is the importance of O-D survey? Explain road side interview method for O-D survey.

(b) Explain with sketches merging and diverging flow on highway. What is 07 ÷weaving ∅?

Q.5	(a)	Draw the neat sketch of Mandatory signs (any four) and Warning signs (any four).	07
	<b>(b)</b>	What are the causes for road accidents? Suggest the remedial measures for the	07
		same.	
		OR	
Q.5	(a)	Explain the methods of controlling on-street parking.	07
	(b)	Explain Full Cloverleaf Interchange with neat sketch.	07

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