

**GUJARAT TECHNOLOGICAL UNIVERSITY****M. E. - SEMESTER – I • EXAMINATION – SUMMER • 2013****Subject code: 711302 N****Date: 04-06-2013****Subject Name: Traffic Engineering I****Time: 10.30 am – 01.00 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 physical characteristics of vehicle. **07**

**(b)** Define  $\phi$  Volume, Speed, Density, Space Headway, Time Headway, Time Mean Speed, Space Mean Speed. **07**

**Q.2 (a)** Enlist the methods of Traffic Volume Count. Explain any one Mechanical Method. **07**

**(b)** What are the purposes of Spot Speed Study? Explain in detail. **07**

**OR**

**(b)** Following field data are collected through a traffic study for the spot speed. **07**

Speed Class (Kph)	No. of vehicles observed
10-14.9	5
15-19.9	12
20-24.9	25
25-29.9	32
30-34.9	58
35-39.9	40
40-44.9	20
45-49.9	10
50-54.9	8

Calculate :- (i) Modal Speed (ii) Median Speed  
 (iii) Time Mean Speed  
 (iv) Speed to be used in geometric design  
 (v) Speed for traffic regulation

**Q.3 (a)** Enlist the Methods of O & D studies. Explain Post Card Method. **07**

**(b)** Explain the terminology - Parking Load, Parking Capacity, Turn Over, Parking Duration, Parking Accumulation **07**

**OR**

**Q.3 (a)** Explain the purposes of parking study. **07**

**(b)** What are the safety measures to be adopted for prevention accidents? Explain in detail. **07**

**Q.4 (a)** What are the causes of accidents? Explain in detail. **07**

**(b)** Explain the classification of Traffic Signs with neat sketch. **07**

**OR**

**Q.4 (a)** Explain various types of road marking. **07**

**Q.4 (b)** Explain PIEV Theory with sketch. **07**

**Q.5 (a)** Two kilometer section of a road is covered by three vehicles in 2 min, 3 min and 4 min. Calculate the **07**

- (i) Time Mean Speed      (ii) Space Mean Speed  
(iii) Standard deviation of the space distribution of speed.

**(b)** Explain Greenshield's Speed vs Density Model. **07**

**OR**

**Q.5 (a)** Explain the psychological characteristics of Road users. **07**

**(b)** Explain the License Plate method of delay study. **07**

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