

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – I • EXAMINATION – WINTER • 2014

Subject code: 711302N**Date: 02-12-2014****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 mark.

- Q.1** (a) Explain the terms: travel time delay, stop delay. Homogeneous traffic flow, heterogeneous traffic flow, PCU Equivalent. **05**
- (b) Explain with suitable example, how vehicular characteristics effect traffic flow behavior. **05**
- (c) Enlist various Traffic surveys? Explain method of conducting spot speed & classified volume count survey. **04**
- Q.2** (a) What is meant by conflicts in context to vehicular flow? Classify types of conflicts. Explain how it influences the traffic flow behaviour? Also suggest methods to reduce conflicts. **05**
- (b) For the following data on speed and density, determine the parameters of the Green shields' model. Also find the maximum flow and density corresponding to a speed of 30 km/hr. **09**

k	v
171	10
129	30
20	80
70	50

OR

- (b) The result of a speed study is given in the form of a frequency distribution table. Find the time mean speed and space mean speed. **09**
- | speed range | frequency |
|-------------|-----------|
| 2-5 | 10 |
| 6-9 | 40 |
| 10-13 | 00 |
| 14-17 | 70 |

- .3** (a) The data from four moving observer test methods are shown in the table. Column 1 gives the sample number, column 2 gives the number of vehicles moving against the stream, column 3 gives the number of vehicles that had overtaken the test vehicle, and last column gives the number of vehicles overtaken by the test vehicle. Find the three fundamental stream parameters for each set of data. Also plot the fundamental diagrams of traffic flow. **07**

Sample no.	1	2	3
1	107	10	74
2	113	25	41
3	30	15	5
4	79	18	9.

- (b) What is Parking Demand? Explain method to assess Parking demand? **07**

OR

- Q.3** (a) Define Time mean speed & space mean speed? Establish relationship between them. **07**
- (b) Explain methods to conduct spot speed survey. **07**

- Q.4** (a) Explain the terms Spacing, Headway. How do they influence the traffic flow behavior? **07**
- (b) What is meant by Parking Pricing? How is the Parking Price Determined? **07**

- Q.5** (a) Explain the procedure to conduct stop delay studies at intersection. How is it useful in Traffic flow regulation? **07**
- (b) What are the different types of traffic volume counts under taken in Traffic volume studies? Where and how are they useful for traffic flow analysis, Planning & design of Transportation System? **07**
