

**GUJARAT TECHNOLOGICAL UNIVERSITY****M.E –I<sup>st</sup> SEMESTER–EXAMINATION – JULY- 2012****Subject code: 711302N****Date: 07/07/2012****Subject Name: Traffic Engineering -I****Time: 2:30 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) Discuss the road user human behavior also explain PIEV 07  
 (b) A driver of vehicle starts displacing vehicle at a distance of 07  
 200.0 m while driving at speed of 60kmph. After seeing a road sign placed at distance 4m  
 left side of path. Where the  
 Sign board is to be placed so that driver can displace at 400.m
- Q.2** (a) Describe the static and dynamic characteristics of vehicle 07  
 (b) Define the terms :- (i) spot speed (ii) running speed (iii) delay (iv) traffic volume (v) space 07  
 mean speed (vii) traffic lane

**OR**

- (b) Explain by drawing sketch traffic flow characteristics merging ,diverging and weaving 07
- Q.3** (a) Draw the sketch of cross road junction and six road rotary 07  
 Junction showing movements of traffic  
 (b) Describe step wise procedure of Origin and Destination studies. 07

**OR**

- Q.3** (a) What are the reasons of traffic accidents enumerate the remedial measures. 07  
 (b) The following data was collected during spot speed studies 07

| Speed group | Vehicles observed | Speed group | Vehicles observed |
|-------------|-------------------|-------------|-------------------|
| 10-14.9     | 8                 | 35-39.9     | 52                |
| 15-19.9     | 16                | 40-44.9     | 28                |
| 20-24.9     | 32                | 45-49.9     | 19                |
| 25-29.9     | 39                | 50-54.9     | 10                |
| 30-34.9     | 65                | 55-59.9     | 06                |

Draw the graph of speed versus % vehicles and find model speed, 15<sup>th</sup> percentile, 85<sup>th</sup> percentile speed and standard deviation.

- Q.4** (a) Explain “ green shield model “ 07  
 (b) What are the objectives of traffic volume count studies 07

**OR**

- Q.4** (a) What are the purposes of travel time and delay studies 07  
 (b) The following twenty five observations were taken during spot speed studies by radar 07  
 techniques  
 50,40,60,54,45,31,72,58,43,52,46,56,43,65,33,69,34,51,47,41,62,55,40,69  
 Calculate time mean speed and space mean speed

- Q.5** (a) What are the ill effects of illegal parking 07  
 (b) Draw the sketch of advance direction sign and route marker sign 07

**OR**

- Q.5** (a) Explain statistical methods for analysis of accident area. 07  
 (b) Draw the sketch of 07  
 (i) pavement marking for transition from four lane to divided two way lane  
 (ii) pavement marking for stop line

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