

GUJARAT TECHNOLOGICAL UNIVERSITY**M.E Sem-II Examination July 2010****Subject code: 721301****Subject Name: Traffic Engineering- 2****Date: 05 /07 /2010****Time: 11.00am – 1.30pm****Total Marks: 60****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is speed and volume? Discuss the relationship between speed, flow and density for uninterrupted flow by HCM method. **06**
- (b) Define the Basic capacity. Explain the factors affecting Capacity and Level of service. **06**

- Q.2** (a) Discuss the adverse effect of air pollution on human health. **06**
- (b) What are prevention and control of noise pollution? **06**

OR

- (b) What is air pollution? What are the principle emissions from automobile emission. **06**
- Q.3** (a) Explain the importance of traffic control device. Describe various types of signs with neat sketches. **06**
- (b) A three phase traffic signal is to be installed at a right angled crossing of two streets. The width of each approach lane is 3 m. The volume of on each lag is given in the following table. **06**

From	E		W		N	S
To	N	W & S	S	E & N	E,S&W	W,N & E
PCU/hr	400	840	320	900	540	400

The Road width in North South direction and East West direction is 13.5 m and 17 m respectively. Assume design vehicle length 5 m, Approach speed 12.5 m/s, Perception reaction time 1 sec., Comfortable deceleration rate 4 m/s^2 , start up loss time 2 sec, movement loss time 1 sec and no All red time. Find the All signal time (Right turning in the north and south bound road is negligible).

OR

- Q.3** (a) Explain the importance of Signal coordination. **06**
- (b) What is merging? PQ and RS are two rural sections of a highway intersecting with a weaving section as shown in **fig. 1**. It is desired to provide a level of service B (quality of service II) for the traffic volume is 1060 PCU/lane. Determine the minimum length and width of the weaving section. **06**

