

GUJARAT TECHNOLOGICAL UNIVERSITY**M.E Sem-I Examination January 2010****Subject code: 711302****Subject Name: TRAFFIC ENGINEERING I****Date: 22 / 01 /2010****Time: 12.00 – 2.30 pm****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) Derive the relation between time mean speed and space mean speed. **06**
- (B) Speed observations from a radar speed meter have been taken giving the speeds of the subsidiary streams composing the flow along with the volume of traffic of each subsidiary stream. The readings are as under. **06**

Speed (kmph)	Volume (vph)
2-5	2
6-9	5
10-13	0
14-17	8
18-21	20
22-25	40
26-29	84
30-33	95
34-37	47
38-41	37
42-45	65
46-49	3
50-53	9
54-57	4

- Calculate: (i) Time mean Speed (ii) space mean speed (iii) variance about space mean speed
- Q.2 (A) Describe in detail the various Volume data techniques in the present scenario of IT/ computer application in Traffic engineering **06**
- (B) Derive the equation by moving observer method for determination of flow and journey speed **06**

OR

- (B) A test car was used on North-South road of National highway for a test section of 3.0 km and the following data for the moving car was observed: **06**

Direction	Trip No.	Travel Time (Min)	No. of Vehicles met against stream	No of vehicles overtaking test car	No of vehicles overtaken by test car
North	1	4.20	85	6	2
	2	4.25	89	7	3
	3	4.15	83	5	2
	4	3.90	84	4	3
South	1	4.30	83	8	4
	2	4.15	78	5	3
	3	3.90	80	4	5
	4	3.80	85	6	3

Calculate :

- (i) Flow in both direction.
- (ii) Journey speed.
- (iii) Running Speed

- Q.3 (A) Describe the need for the OD survey, Briefly explain various methods of OD survey techniques. **06**
- (B) How will you plan and execute the OD survey for the city in which you are living? How will you present the above information? **06**
- OR** **06**
- Q.3 (A) What is headway? Explain its importance in traffic engineering. **06**
- (B) Explain in detail the distribution followed by Headway. **06**
- Q.4 (A) Why road accident study is important? Explain briefly the utilization of the road accident data. **06**
- (B) Explain the different statistical methods for analysis of accident data. **06**
- OR** **06**
- Q.4 (A) Explain in detail the various road user characteristics important as per traffic point of view. **06**
- (B) Describe with neat sketches various techniques of controlling traffic at Intersection. **06**
- Q.5 (A) Which are the different techniques of traffic control ? Briefly explain their importance in traffic engineering. **06**
- (B) Comment “Pedestrian facilities in the Indian cities are not given proper justification in planning” **06**
- OR** **06**
- Q.5 (A) Briefly explain the need for parking survey. **06**
- Define (i) Parking Accumulation
- (ii) Parking Volume
- (iii) Parking Load
- (iv) Paring Index
- (v) Parking Turnover
- (B) What is Parking Meters ? Give your views on the utilization of this technique in Indian context. **06**
