

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– VII (New) EXAMINATION – WINTER 2019****Subject Code: 2170613****Date: 23/11/2019****Subject Name: Traffic Engineering****Time: 10:30 AM TO 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 PIEV theory in brief. **03**
 (b) Explain vehicular characteristics in brief. **04**
 (c) Define traffic engineering. What is the scope of traffic engineering? **07**

- Q.2** (a) List out various regulatory signs and Draw any five. **03**
 (b) Write the advantages and disadvantages of manual count in traffic volume study. **04**
 (c) What are the design factors to be considered in traffic rotary? **07**

OR

- (c) Write a note on Grade separated intersections. **07**

- Q.3** (a) Draw following for spot speed data presentation graphically. **03**
 i) Histogram and frequency distribution curve.
 ii) Cumulative frequency curve
 (b) Write a note about fixed time signals. **04**
 (c) Explain pavement road markings as per IRC. **07**

OR

- Q.3** (a) Write the factors affecting PCU. **03**
 (b) Discuss about Informatory sign in brief. **04**
 (c) The following information was collected during 'Moving observer study' on a 0.8 km road length. **07**

Sr No.	Data type	Journey North bound	Journey South bound
1	Journey time (minutes)	0.94	1.06
2	Stopped time (minutes)	0.10	0.09
3	Vehicle met in the opposite direction		
	Car	10	8
	Bus	3	2
	Truck	2	0
	Motor cycle	6	8
4	Number of overtaking vehicles	2	3
5	Number of overtaken vehicles	1	2

Determine flow in both the directions in PCU/hr. Also find journey speed and running speed.

- Q.4** (a) Define the following: **03**
 i) Traffic volume ii) PCU iii) Space mean speed
 (b) Write the causes of accidents. **04**

- (c) Explain off-street parking methods in detail. **07**
- OR**
- Q.4** (a) Define the following: **03**
 i) Time mean speed ii) Modal speed iii) AADT
- (b) Enlist the methods for the travel time and delay study. Explain any one in detail. **04**
- (c) Explain collision and condition diagram. **07**
- Q.5** (a) Draw figures of channelized intersections. **03**
- (b) Define the following: **04**
 i) Luminous flux ii) Lumen
 iii) Luminous intensity iv) Candela
- (c) Describe the factors to be considered in the design of street lighting. **07**
- OR**
- Q.5** (a) Write advantages and disadvantages of traffic island. **03**
- (b) Explain the types of light sources. **04**
- (c) Explain the fundamental factors of night vision. **07**
