

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2020****Subject Code:2170613****Date:19/01/2021****Subject Name:Traffic Engineering****Time:10:30 AM TO 12:30 PM****Total Marks: 56****Instructions:**

1. Attempt any **FOUR** questions out of **EIGHT** questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

	MARKS
<b>Q.1</b> (a) Explain the various physical factors of road user characteristics.	<b>03</b>
(b) Explain static and dynamic characteristics of vehicles and their importance.	<b>04</b>
(c) Enlist the various methods available for traffic volume counts and explain the manual count method	<b>07</b>
<b>Q.2</b> (a) Define the following:1) 85 <sup>th</sup> Percentile Speed 2) Median Speed 3) Space Mean Speed.	<b>03</b>
(b) What is PCU, explain the factors for deciding the PCU. Give the PCU of cycle, Scooter, Bus, Bullock Cart	<b>04</b>
(c) Discuss the purpose and methods of conducting Origin and Destination study. Explain any one method of conducting Origin and Destination study	<b>07</b>
<b>Q.3</b> (a) Explain the presentation of spot speed data with help of Cumulative Frequency curve.	<b>03</b>
(b) What are the causes of road accidents? Also discuss collision and condition diagram with neat sketch.	<b>04</b>
(c) Explain the design factors for Rotary Intersection with its advantages and disadvantages	<b>07</b>
<b>Q.4</b> (a) Explain the three types of traffic signs with the help of neat sketches	<b>03</b>
(b) Explain the various types of road markings with the help of neat sketches as per IRC.	<b>04</b>
(c) Explain in detail the Webster method for designing traffic signals	<b>07</b>
<b>Q.5</b> (a) Define the following terms: Luminous flux, Candela, Overhang.	<b>03</b>
(b) Define the following: Parking Load, Parking Space Hour, Parking Index, Turn Over	<b>04</b>
(c) Enlist the types of grade separated intersections. Draw a neat sketch of Full Clover Leaf intersection	<b>07</b>
<b>Q.6</b> (a) Write the importance and functions of traffic control devices	<b>03</b>
(b) Show the lamp installation at 'T' junction, cross-roads and rotary intersection with the help of sketch.	<b>04</b>
(c) The average normal flow of traffic on cross roads A and B during design period 500 and 250 pcu per hour. The saturation traffic flow values on these roads are estimated as 1200 and 900 pcu per hour respectively. The all red time required for pedestrian crossing is 12 seconds. Design a two phase traffic signal by Webster method.	<b>07</b>

- Q.7** (a) Explain the types of parking with the help of sketches. **03**  
(b) Write short note on: 1) Accuracy check of O-D data 2) Presentation of O-D data **04**  
(c) Discuss the purpose and method of conducting Public Transportation study. **07**
- Q.8** (a) Explain the causes of accidents and preventive measures to avoid accidents. **03**  
(b) Explain the following: 1)Hourly Volume 2) ADT 3)AADT **04**  
(c) Discuss the Rotary Design Elements. **07**

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