Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (NEW) EXAMINATION – WINTER 2017

Subject Code: 2170613   **Date:02/11/2017**
Subject Name: Traffic Engineering(Departmental Elective - II)
Time: 10:30 AM TO 01:00 PM   **Total Marks: 70**

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

Q.1	(a)	Describe various vehicular characteristics considered in traffic engineering.	03
	(b)	Discuss presentation of spot speed data with neat sketches.	04
	(c)	Explain the term traffic volume. Also discuss different methods of carrying out traffic volume studies.	07
Q.2	(a)	Explain pavement surface characteristics.	03
	(b)	Discuss distribution of light on the street.	04
	(c)	Explain various methods of O and D study.	07

OR

	(c)	What is traffic island? Discuss functions, types, advantages and disadvantages if it.	07
Q.3	(a)	A vehicle travelling with a speed of 45 kmph was stopped within 1.7 seconds after application of brakes. Find the average skid resistance.	03
	(b)	Discuss various types of coordinated signal systems.	04
	(c)	Enlist purposes of travel time and delay study. Also explain fixed delay and operational delay.	07

OR

Q.3	(a)	Discuss diamond interchange with neat sketch.	03
	(b)	What are the causes of road accidents? Also discuss collision and condition diagram.	04
	(c)	Explain Rotary Intersection with its advantages and disadvantages.	07
Q.4	(a)	Write a short note on full cloverleaf junction.	03
	(b)	Explain various design factors for street lighting.	04
	(c)	Discuss fundamental diagrams of traffic flow.	07

OR

Q.4	(a)	Describe physical factors of road users.	03
	(b)	Explain various types of parking surveys.	04
	(c)	The length of a road stretch used for moving observer test is 0.5 km and the speed with which the test vehicle moved is 20 km/hr. Number of vehicles encountered in the stream while the test vehicle was moving against the traffic stream is 107. Number of vehicles that had overtaken the test vehicle is 10 and the number of vehicles overtaken by the test vehicle is 74. Find the flow, density and average speed of the stream.	07
Q.5	(a)	Indicate and explain how spacing of street lighting is decided.	03
	(b)	Explain various types of traffic signals with advantages and disadvantages.	04
	(c)	Explain various traffic signs as per IRC with neat sketches.	07

OR

Q.5	(a)	Explain AADT and ADT.	03
	(b)	Calculate Time mean speed and Space mean speed from the following spot speed observations and verify the relation between the two. 50,40,60,54,45,31,72,58,43,52,46,56,43,65,33,69,34,51,47,41,62,43,55,40,49.	04
	(c)	Explain spot speed, running speed and journey speed. How spot speed studies carried out?	07