Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI(NEW) EXAMINATION – WINTER 2022

Subject Code:3160615 Date:17-12-2022

Subject Name:Traffic Engineering and Management

Time:02:30 PM TO 05:00 PM Total Marks:70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	Define: flow, AADT, journey speed	**03**
	(b)	Write the factors affecting PCU.	**04**
	(c)	Explain about various on street parking with layout.	**07**
Q.2	**(a)**	Write advantages of traffic signals.	**03**
	(b)	Explain PIEV Theory.	**04**
	(c)	Explain about various methods of traffic volume survey.	**07**
		OR	
	(c)	Draw fundamental diagram of traffic flow and brief explain.	**07**
Q.3	**(a)**	Write functions of traffic islands.	**03**
	(b)	Write the uses of origin and destination survey.	**04**
	(c)	Explain about preventive measures for accidents.	**07**
		OR	
Q.3	**(a)**	Write static vehicular characteristics.	**03**
	(b)	The vehicle passes 1km length of road in 1 min, 2 min and 3 min time respectively. Find time mean speed and space mean speed.	**04**
	(c)	Write the cases of bottlenecks and explain any one case with neat sketch.	**07**
Q.4	**(a)**	Draw clover leaf interchange with notation.	**03**
	(b)	How theoretical capacity of highway is determined?	**04**
	(c)	Write advantages and disadvantages of rotary intersection.	**07**
		OR	
Q.4	**(a)**	Explain about tidal flow operations.	**03**
	(b)	Explain about traffic actuated signals.	**04**
	(c)	Explain about Webster's method.	**07**
Q.5	**(a)**	Write purposes of travel time and delay study.	**03**
	(b)	Write short note on: Intelligent Transport System.	**04**
	(c)	Explain about various level of service with neat sketch.	**07**
		OR	
Q.5	**(a)**	What are needs of traffic forecasting?	**03**
	(b)	How accident reporting is carried out?	**04**

(c) A test car was used on a north – south road 0.75 km long, and the following data for the moving car was collected. **07**

North trip No.	Travel Time (min)	No. of vehicles met against	No. of vehicles overtaking test car	No. of vehicles overtaken by test car
1	2.65	85	1	0
2	2.70	83	3	2
3	2.35	77	0	2
4	3.00	85	2	0
5	2.42	90	1	1

South trip No.	Travel Time (min)	No. of vehicles met against	No. of vehicles overtaking test car	No. of vehicles overtaken by test car
1	2.33	110	2	0
2	2.71	115	0	2
3	2.48	120	0	0
4	2.54	125	1	1
5	2.16	105	0	2

Calculate traffic volume, average travel time and space mean speeds in both directions.

****