

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER- VI EXAMINATION – SUMMER 2026

Subject Code:3160615

Date:01-06-2026

Subject Name: Traffic Engineering and Management

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.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Briefly explain the scope of traffic engineering.	03
	(b) What are the objectives of accident study? List out the various causes of accident.	04
	(c) Explain the fundamental relationship between traffic flow parameters with the help of sketch.	07
Q.2	(a) Define: Time mean speed, Traffic flow, Time head way.	03
	(b) Briefly explain enoscope method to measure spot speed.	04
	(c) Enlist various road user characteristics. Explain visual factors in detail.	07
	OR	
	(c) Enlist various vehicular characteristics. Explain various resistances to the motion of a vehicle and power requirements of the vehicle?	07
Q.3	(a) What are the various types and objectives of traffic studies?	03
	(b) Define skid and slip. A vehicle moving at a speed of 60 kmph was stopped by applying brakes and the skid length was found as 24.0 m. If average skid resistance is 0.65, find the brake efficiency of the vehicle.	04
	(c) What are the purpose of travel time and delay study? Explain moving observer method in detail.	07
	OR	
Q.3	(a) Briefly Explain: Histogram, Cumulative frequency curve, Isochrones.	03
	(b) What are the preventive measures to be taken to reduce the accident rates?	04
	(c) A vehicle of mass 2000 kg has to accelerate at 2 m/s^2 from a speed of 12 kmph to 22 kmph in the 1st gear. The gradient is +1.5% and coefficient of rolling resistance is 0.025. The frontal area and coefficient of air resistance are 2.38 m^2 and 0.37 respectively. Determine engine horse power required.	07
Q.4	(a) Define: Parking index, Parking load, Parking turn over	03
	(b) Explain queuing theory concept.	04
	(c) Explain the methods of on-street parking with design standards.	07
	OR	
Q.4	(a) What is rotary intersection? What are its advantages and disadvantages?	03
	(b) Describe traffic forecast based on past trends and extrapolation.	04
	(c) Explain various design elements of rotary as per IRC: 65-1976 with the help of neat sketch.	07

- Q.5** (a) Write short note on: Level of Service **03**
(b) Show the conflicts at an intersection with neat sketch of the following: **04**
(i.) Conflict for cross road (both two way)
(ii.) Conflict for cross road (one two way and other one way)
(c) Enlist the various methods for the design of fixed time signals. Explain Webster's method in detail. **07**

OR

- Q.5** (a) Write the advantages and disadvantages of traffic signals. **03**
(b) Write the advantages and disadvantages of grade separated interchanges? List out the site conditions favouring for it. **04**
(c) Give strategic management solutions to overcome traffic problems in metropolitan cities in India. **07**
