

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2023****Subject Code:3160615****Date:14-07-2023****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) Define following elements of traffic flow. (1) Speed (2) Volume (3) Density	03
	(b) Explain various pavement surface characteristics.	04
	(c) Describe various causes and preventive measures for accidents.	07
Q.2	(a) What are benefits of channelized intersection?	03
	(b) Explain need for traffic forecasting.	04
	(c) Discuss traffic forecast based on past trends and extrapolation	07
	OR	
	(c) Explain traffic forecasting based on past trends and extrapolation.	07
Q.3	(a) What are purposes of traffic management?	03
	(b) Write a short note on peripheral parking system.	04
	(c) Describe various physical factors affecting behavior of road users.	07
	OR	
Q.3	(a) How basic capacity of single lane is determined?	03
	(b) Describe legislative measures may be adopted to reduce accidents.	04
	(c) Define term “Kerb parking”. Describe various types of off-street parking.	07
Q.4	(a) What are adverse effects of parking?	03
	(b) Describe various automatic counters used for traffic volume study.	04
	(c) Which site conditions favoring grade separated intersection? Discuss diamond interchange in detail.	07
	OR	
Q.4	(a) How spot speed data presented graphically?	03
	(b) The average length of vehicle in traffic is 6 m and average distance is 3.5 m, between the vehicles. Take average time headway at maximum flow is 2.0 seconds. Calculate jam density, maximum flow and optimum speed.	04
	(c) Enumerate various types of traffic signals. Also explain design of fixed time signals.	07
Q.5	(a) Give importance of highway capacity in highway transportation studies.	03
	(b) What are objectives of traffic demand management? Also list out commonly adopted techniques for traffic demand management	04
	(c) Define level of service. Also discuss six level of services and factors affecting level of service.	07
	OR	
Q.5	(a) Enlist ideal conditions for uninterrupted flow as per highway capacity manual.	03
	(b) Draw various conflict point diagram for roads.	04
	(c) Describe various traffic management measures are adopted to control traffic.	07