

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-VI (NEW) EXAMINATION – WINTER 2024****Subject Code:3160615****Date:05-12-2024****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.

- Q.1** (a) Define: Perception time, Intellection time, Volition time **03**
 (b) Explain vehicular characteristics. **04**
 (c) Describe various causes and preventive measures for road accidents. **07**

- Q.2** (a) Enlist the function of traffic engineer. **03**
 (b) Explain collision diagram and condition diagram. **04**
 (c) Discuss about Origin and Destination survey in detail. **07**

OR

- (c) Discuss traffic forecasting based on past trends. **07**

- Q.3** (a) Draw fundamental diagram of traffic flow parameter. **03**
 (b) Write short note: On-street parking system. **04**
 (c) Write the cases of bottlenecks and explain any one case with neat sketch. **07**

OR

- Q.3** (a) Draw the cumulative frequency curve. **03**
 (b) Ten spot speed surveys are: 69,63,40,72,75,58,65,34,38,47
 Calculate: (1) Time mean Speed (2) Space mean Speed **04**
 (c) Describe the various methods of travel time and delay study. **07**

- Q.4** (a) Draw any three regulatory sign. **03**
 (b) Differentiate grade separated and at grade intersections. **04**
 (c) Enlist various methods of designing fixed time signal and explain webster's method. **07**

OR

- Q.4** (a) Draw clover leaf interchange with notation. **03**
 (b) Write short note on: Rotary intersection. **04**
 (c) Design an isolated fixed time 2 – phase traffic signal for following design hour traffic flow for a right-angled intersection. Design optimum cycle length using Webster's formula and sketch timing diagram and phase diagram. **07**

Flow/legs	North	East	South	West
Flow q in PCU/hr	700	500	400	350
Flow s in PCU/hr	1600	1400	1300	1350

- Q.5** (a) List out the factors affecting highway capacity and level of service. **03**
 (b) What are objectives of traffic demand management? Also list out commonly adopted techniques for traffic demand management. **04**
 (c) Describe the various traffic management measures adopted to control traffic. **07**

OR

- Q.5** (a) Discuss about various highway terminal facilities. **03**
 (b) Write short note on: Intelligent Transport System (ITS). **04**
 (c) Discuss PCU for rural and urban area according to stated in Indo-HCM. **07**
