PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING
MID TERM EXAMINATION - NOV 2023

Semester : Semester VII - 2020
Course Code : CIV2026
Course Name : Sem VII - CIV2026 - Traffic Engineering
Program : B. TECH

Date : 3-NOV-2023
Time : 11:30AM - 1:00PM
Max Marks : 60
Weightage : 30%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.
(iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS   **(5 X 2 = 10M)**

1. What are the key factors considered in traffic engineering?

(CO1) [Knowledge]

2. For design purposes, density (K) represents the proportion of AADT occurring during the 30th peak hour of the year. Define the 30th peak hourly volume.

(CO2) [Knowledge]

3. List the 4 important road user characteristics.

(CO1) [Knowledge]

4. Define Spacing Headway and write the relationship between Time headway (h) and Spacing (s)

(CO2) [Knowledge]

5. Differentiate Between Macroscopic and Microscopic traffic stream parameter with examples?

(CO2) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS   **(2 X 15 = 30M)**

6. Traffic studies involve measuring and quantifying various aspect of highway traffic. There are various components as well as elements of Traffic Engineering. Explain the Elements of Traffic Engineering in detail.

(CO1) [Comprehension]

7. Write a short note on Peak Hour Factor (PHF). What is the Theoretical range and Practical Range of PHF?
Calculate PHF from the following data of an intersection survey:

Time interval	03:00-03:15	03:15-03:30	03:30-03:45	03:45-04:00	04:00-04:15	04:15-04:30	04:30-04:45	04:45-05:00	05:00-05:15
Vehicles	250	276	339	222	400	425	379	353	222

(CO2) [Comprehension]

PART C

ANSWER THE FOLLOWING QUESTION   **(1 X 20 = 20M)**

8.

To avoid traffic congestion and to provide efficient free and rapid flow of all types of traffic, the studies of traffic characteristics and traffic operations have become essential before planning and designing of any Transportation system. In this regard, explain :
(i) Objectives of Traffic engineering
(ii) Scope of traffic engineering and
(iii) Various Traffic user characteristics

(CO2) [Application]