

CBCS SCHEME

17CV561

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Fifth Semester B.E. Degree Examination, Jan./Feb. 2023 Traffic Engineering

Max. Marks: 100

Time: 3 hrs.

- Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Missing data may be assumed suitably.

Module-1

- a. List the different road user characteristics and explain the concept of PIEV theory. (10 Marks)
b. Explain briefly the different vehicular characteristics which affect road design. (10 Marks)

OR

- a. Write short notes on :
i) Remedial measures to meet urban traffic problem (10 Marks)
ii) Integrated town planning
b. Establish the relationship between speed and concentration using Green shields theory. (10 Marks)

Module-2

- a. Mention the objective of Origin and Destination study. Explain different forms of presenting origin and destination data. (10 Marks)
b. Spot speed studies were carried out at a certain stretch of a highway and the consolidated data collected are given below :

Speed range (Kmph)	No. of vehicles observed	Speed range (Kmph)	No. of vehicles observed
0 to 10	12	50 to 60	255
10 to 20	18	60 to 70	119
20 to 30	68	70 to 80	43
30 to 40	89	80 to 90	33
40 to 50	204	90 to 100	09

Determine :

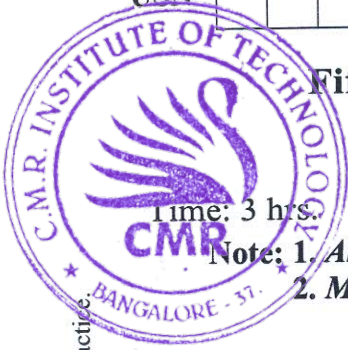
- i) Upper and lower values of speed limit for regulation
ii) Design speed for checking the geometric design element of the highway. (10 Marks)

OR

- a. Define the term spot speed. Explain Enoscope method of measuring spot speed with a neat sketch. (10 Marks)
b. With neat sketches, explain condition diagram and collision diagram related to accident studies. (10 Marks)

Module-3

- a. Enlist the advantages and disadvantages of rotary intersection. (10 Marks)
b. The average normal flow of traffic on cross roads A and B during design period are 400PCU and 250 PCU per hour. The saturation flow values on these roads are estimated as 1250 PCU and 1000 PCU per hour respectively. The all red time required for pedestrian crossing is 12 seconds. Design two phase traffic signal by Webster's method. (10 Marks)



OR

- 6 a. Write short notes on :
i) Channelized intersections (10 Marks)
ii) Unchannelized intersection (10 Marks)
- b. Explain types of coordination of signals for road network. (10 Marks)

Module-4

- 7 a. Explain the effects of traffic noise on the environment and mention the control measures to be adopted to control the effect of traffic noise. (10 Marks)
- b. What are the major air pollutants due to traffic? Explain the consequences of the air pollutant on environment and road user. (10 Marks)

OR

- 8 a. Enlist the objectives of road accident studies. Explain in detail the causes of road accidents. (10 Marks)
- b. Write short notes on :
i) Promotion of non-motorized transport (10 Marks)
ii) Measures to decrease accidents. (10 Marks)

Module-5

- 9 a. Explain Intelligent Transport System for traffic management. (10 Marks)
- b. Define traffic congestion. Explain the different methods that reduce traffic congestion. (10 Marks)

OR

- 10 a. What are the requirements of a good pricing system? Explain the economic principles involved behind road pricing. (10 Marks)
- b. Explain in brief the traffic system management measures. (10 Marks)
