CBCS SCHEME

USN | | | | | | | | | |

17CV561

Fifth Semester B.E. Degree Examination, Feb./Mar. 2022
Traffic Engineering

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. Explain PIEV theory with a neat sketch. **(06 Marks)**
   b. List and explain briefly, the various common problems related to urban traffic and transport. **(06 Marks)**
   c. Explain the various vehicular characteristics affecting the design and operation of traffic. **(08 Marks)**

OR

2 a. Explain the relationship between time mean speed and space mean speed. **(06 Marks)**
   b. Explain in detail, the various aspects of human vision affecting the road users. **(08 Marks)**
   c. Write a note on integrated planning of town, country, and regional infrastructure. **(06 Marks)**

Module-2

3 a. Explain the concept of level of service and the various factors affecting capacity and level of service. **(08 Marks)**
   b. The field data collected through a field study is summarized in the table below :

Speed Class	No. of Vehicals observed	Speed class	No. of vehicles observed
10 – 14.99	3	35 – 39.99	43
15 – 19.99	10	40 – 44.99	21
20 – 24.99	21	45 – 49.99	10
25 – 29.99	31	50 – 54.99	5
30 – 34.99	54	55 – 59.99	2

   by using above data, calculate :
   i) Modal speed   ii) Median speed   iii) Time mean speed   iv) Speed limit for traffic regulation   v) Speed used for geometric design   vi) Standard deviation and coefficient of variation. **(12 Marks)**

OR

4 a. With neat sketches, explain the various methods of presenting the data collected in O and D surveys. **(06 Marks)**
   b. In a floating car study of speed and delay on a stretch of a road of 1km length, six runs were made in each direction, up and down, and the obtained average values are given below. Calculate the flow in upward direction and also the journey and running speeds.

Direction	Journey time (min)	Stopped time (sec)	Opposing traffic	No. of overtaking vehicles	No. of overtaken vehicles
Up	1.0	6	30	2	1.0
Down	1.2	7	20	2	1

(08 Marks)
   c. Explain the various statistical applications in traffic studies. **(06 Marks)**

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Module-3

5 a. List and explain the various types of pavement marking with sketches. **(10 Marks)**
b. Explain the classification of intersections at grade, with neat sketches. **(10 Marks)**

OR

6 a. List the various advantages of channelization. **(06 Marks)**
b. Explain the various types of classification of traffic signs. **(06 Marks)**
c. A fixed time 2 phase signal is to be provided at an intersection having a North – South and East – West road where only straight ahead traffic is permitted. The design hour flows from the various arms and the saturation flows for these arms are given in the following table :

	North	South	East	West
Design hour flow (q) in PCU/hour	800	400	750	1000
Saturation flow (s) PCV/hour	2400	2000	3000	3000

Calculate the optimum cycle time and green times for the minimum over all delay. The green time is minimum/amber time is 2 second time lost per phase due to starting delay is 2 sec. Sketch the phase diagram. **(08 Marks)**

Module-4

7 a. Explain the various remedial measures to be taken is reducing accidents. **(07 Marks)**
b. List the various causes of air pollution. **(07 Marks)**
c. Explain the various methods of promotion of non-motorized transport. **(06 Marks)**

OR

8 a. Briefly explain the various factors to be considered in street lighting design. **(10 Marks)**
b. Discuss in detail, various measures to be considered in controlling noise pollution.
(10 Marks)

Module-5

9 a. Discuss in detail, the various methods for traffic segregation. **(07 Marks)**
b. List the advantages of one-way streets. **(07 Marks)**
c. List and explain the three types of ITS technologies, in detail. **(06 Marks)**

OR

10 a. Discuss in detail, the Travel Demand Management Techniques. **(07 Marks)**
b. Discuss the relevance of parking pricing in detail. **(07 Marks)**
c. Write a note on Area Traffic Management System. **(06 Marks)**

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