Code : 011761

B.Tech 7th Semester Exam., 2020

TRAFFIC ENGINEERING

Time : 3 hours   Full Marks : 70

Instructions:

(i) The marks are indicated in the right-hand margin.

(ii) There are **NINE** *questions in this paper.*

(iii) Attempt **FIVE** *questions in all.*

(iv) Question No. **1** *is compulsory.*

1. Choose the correct answer of the following (any *seven*) :   2×7=14

    (a) The maximum number of conflict points is formed in
        (i) one-way regulation on one road
        (ii) one-way regulation on two roads
        (iii) two-way regulation on one road
        (iv) two-way regulation on both roads

    (b) GIVE WAY sign is of
        (i) triangular shape
        (ii) circular shape
        (iii) octagonal shape
        (iv) hexagonal shape

(2)

    (c) STOP sign is having
        (i) octagonal shape
        (ii) circular shape
        (iii) triangular shape
        (iv) any shape

    (d) Which of the following is disadvantage in one-way traffic?
        (i) Increase in average travel speed
        (ii) More effective coordination of signal system
        (iii) More streamlined movement of vehicles
        (iv) More chances of overtaking

    (e) The '3-Es' of traffic engineering stand for
        (i) enforcement, empowerment and eradication
        (ii) engineering, education and expulsion
        (iii) engineering, education and enforcement
        (iv) engineering, education and enthusiasm

(f) The most important objective of traffic engineering is to

   (i) consider pedestrians as obstruction

   (ii) reduce the accidents ✓

   (iii) increase the traffic

   (iv) provide a high-speed road without any other priority

(g) The first stage in the traffic engineering studies is

   (i) traffic volume studies ✓

   (ii) spot speed studies

   (iii) speed and delay studies

   (iv) origin and destination studies

(h) The number of vehicles that pass through a transverse line of road at a given time in a specified direction is called

   (i) traffic studies

   (ii) traffic flow ✓

   (iii) traffic origin

   (iv) traffic destination

(i) Pedestrian data is used for planning

   (i) highway

   (ii) sidewalks and crosswalks ✓

   (iii) kerb

   (iv) camber

(j) The traffic that is prepared based on 365 days of the year is called

   (i) yearly traffic

   (ii) annual average daily traffic ✓

   (iii) average daily traffic

   (iv) average yearly traffic

2. (a) Write in brief the different methods of origin destination (O-D) studies with its significance.   7

   (b) Discuss in brief the 'level of service' concept in design of service level for urban roads.   7

3. (a) Elaborate on traffic forecasting.   7

   (b) Explain the various types of off-street parking facilities.   7

4. (a) Discuss about the various urban transport problems in India.   7

   (b) Explain the fundamentals of traffic flow.   7

5. What are the functions and principles of road markings? Draw and explain the road markings at a four-armed intersection with median. 14

6. A dual carriageway runs north and south with a single way on east and west. There are exclusive right-turn lanes in each of the northern and southern approaches. The central reservation is 1 5 m to accommodate right turns. The radius of right turning stream is 15 5 m. The width of east-west way is 13 m. Design a fixed cycle 3 phase signal with an exclusive phase for right turners from north and south. Draw the phasing and timing diagram as well. The design hour traffic volumes in PCUs are given in the table. Assume all other relevant data. 14

From	N			E		
To	E	S	W	S	W	N
Flow (in PCUs/hour)	50	990	260	45	530	125

From	S			W		
To	W	N	E	N	E	S
Flow (in PCUs/hour)	165	960	210	65	510	140

7. (a) Discuss the advantages and disadvantages of different types of traffic signals. 7

(b) Explain the diamond interchange with neat sketch. 7

8. (a) Explain in detail any two causes of road accidents and corresponding preventive measures. 7

(b) Write a short note on the congestion and parking pricing. 7

9. (a) Explain skidding along with the factors determining skid resistance and road construction practices for obtaining skid resistant surfaces. 7

(b) Explain how the promotion and integration of public transport can be done. 7

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