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RM-7680

B. E. IV (Sem. VIII) (Civil) Examination

April / May – 2010

CE-831-C : Traffic Engg.

(Elective - II)

Time : **3** Hours] [Total Marks : **100**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. E. 4 (Sem. 8) (Civil)**

Name of the Subject :

☛ **CE-831-C : Traffic Engg. : Elective - 2**

☛ Subject Code No. : **7 6 8 0** ☛ Section No. (1, 2,.....) : **1&2**

Seat No. :

Student's Signature

(2) Attempt all questions. Answer to the **two** sections must be in **separate** answer book.
(3) Figures to the **right** indicate full marks.
(4) Draw neat and labelled diagrams wherever **necessary**.
(5) Assume suitable data if necessary.

SECTION - I

1 (a) What are the elements of Traffic Engineering? **16**
(b) Discuss about psychological characteristics of roaduser.
(c) Discuss about various dynamic characteristics of vehicles.
(d) What is Highway capacity?

2 (a) Explain queuing model for traffic flow. **18**
(b) Discuss about level of service for highway.
(c) Discuss about parking problems in CBD.

OR

2 (a) Discuss about preventive measures of accidents.
(b) Discuss about various methods of traffic forecasting.
(c) Explain Q-K-V models for traffic flow study.

3 Attempt any **four** : **16**
(i) Traffic management
(ii) Traffic administration
(iii) Traffic volume study
(iv) Car following model
(v) Delay study
(vi) PIEV theory.

SECTION - II

4 Attempt the following questions :

(a) Expalin geometric design elements of highway. **8**

(b) Explain principles and standardisation of traffic control devices. **7**

OR

(b) Write short note on "Grade separated intersection." **7**

5 (a) Design an isolated fixed time 2-phase traffic signal for the following design year traffic flow for a straight angled intersection. Calculate optimum cycle time and green time for minimum overall delay. The intergreen time should be minimum for efficient operation. The time lost per phase due to starting delays can be assume 2 seconds. **10**

The value of amber period is 2 seconds. Sketch the timing diagram for each phase.

	N	S	E	W
Design flow $\left(\frac{\text{PCU}}{\text{hr}}\right)$:	1000	800	800	700
Saturation flow (PCU/hr) :	2000	2200	2500	2800

(b) Traffic volume in rural area in the design year is given below. The highway intersect at right angles. Carriageway width is 14 m. Design rotary intersection with all assumptions required and check practical capacity of rotary. **10**

Approach	Left turning			Straight Ahead			Right turning		
	Bus	Cars	Bikes	Bus	Cars	Bikes	Bus	Cars	Bikes
N	80	85	100	40	80	145	50	85	165
E	40	90	250	55	70	200	95	40	170
S	60	70	160	50	65	245	40	45	160
W	55	85	80	35	75	275	50	65	210

6 Attempt any three of following : **15**

(i) Warning signs

(ii) Traffic regulations

(iii) Conflict diagram

(iv) Traffic simulation

(v) Advantages and disadvantages of traffic signal.