* S F - 7 6 8 0 / 2 0 0 *

SF-7680

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

May/June – 2011

Traffic Engineering :
(Elective -II)

Time : Hours] [Total Marks :

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 :

☛ Traffic Engineering

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

Seat No. :

Student's Signature

(2) Figure to the right indicate full marks.

(3) Assume suitable data if necessary and mention it clearly.

(4) Draw neat and labelled diagrams wherever necessary.

(5) Attempt all questions.

1 (a) Answer in brief : (any five) **10**

(1) Enlist various methods to carry out origin and destination study.

(2) Which are the preventive measures of accident analysis ?

(3) How to precent traffic volume data ?

(4) Define : (1) Highway capacity, (2) Level of service

(5) Which are the elements of traffic ? Discuss with neat sketch.

(6) Enlist functions of traffic engineering.

(b) Explain organization of state traffic engineering with chart. **6**

OR

(b) Discuss road user characteristic.

2 Answer the following questions : **14**

(1) Explain shock wave phenomenon.

(2) Explain spot speed study with survey methods and presentation of data.

3 Write short note on following : (any four) **20**

(1) Car following model

(2) Queing theory

(3) Vehicle characteristic

(4) Traffic forecasting

(5) Accident study

(6) Traffic flow characteristic

4 (a) Discuss elements of rotary intersection. **7**

(b) Give classification of 'At Grade Intersection'. **7**

OR

(b) Write short note on 'traffic signals'.

5 (a) Traffic flow in urban section at the intersection of two highways in the design year 2010 is given below. **10**

The highway at present intersect at right angles and have a carriageway width of 15 m. Design a notary intersection making suitable assumptions and sketch the notary with all design parameters. Traffic volume is given in terms of PCU.

Approach	*Left turning*			*Straight Ahead*			*Right turning*		
	4 – *W*	3 – *W*	2 – *W*	4 – *W*	3 – *W*	2 – *W*	4 – *W*	3 – *W*	2 – *W*
N	80	100	100	150	70	100	85	60	70
E	100	50	45	150	50	150	60	100	70
S	120	50	60	80	60	90	90	40	50
W	100	60	90	100	45	45	100	60	40

(b) A fixed time 2-phase signal is to be provided at an intersection having an N-S and E-W road where only straight ahead traffic is permitted. The design hour how from various arms and saturation flow is given below. **10**

	N	*S*	*E*	*W*
Design hour how (q) PCUS / hour	750	1000	850	850
Saturation flow (s) PCU / hour	2000	2500	2000	2500

Calculate the optimum cycle time and green times for the minimum overall delay. The intergreen time should be the minimum for efficient operation. The time lost per phase due to starting delays can be assumed 2 seconds. The value of amber period is 2 seconds. Sketch the timing diagram for each phase.

6 Write a short note on following : (any four) **16**

(1) One way street

(2) Informatory signs

(3) Traffic Island

(4) Terminal facilities

(5) Parking space standards

(6) Traffic simulation