Printed Pages : 2

* 1 0 0 5 0 2 *

ECE-502

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : **100502**

Roll No.

B. Tech.

(SEM. V) (ODD SEM.) THEORY EXAMINATION, 2014-15

TRANSPORTATION ENGINEERING - I

Time : 2 Hours] [Total Marks : 50

Note : (1) Attempt all questions.
(2) All questions carry equal marks.
(3) If required any missing data, then choose suitably.

1 Attempt any FOUR parts of the following : **3.5×4=14**

(a) Explain Bombay road plan.

(b) Explain maximum and minimum super elevation in brief.

(c) Calculate the stopping sight distance for design speed of 100 kmph. Take the total reaction time 2.5 seconds and coefficient of friction = 0.35.

(d) Explain bituminous bound macadam and Asphaltic concrete.

(e) Derive the expression for calculating the overtaking sight distance on a highway.

(f) Design the super elevation required at a horizontal curve of radius 300 m for speed of 60 kmph. Assume suitable data.

2 Attempt any TWO parts of the following : **6×2=12**

(a) Write the short notes on (i) Thirtieth highest hourly traffic volume (ii) Traffic volume study.

(b) Enumerate the steps in the construction of cement concrete pavement.

(c) Determine the spacing between contraction joints for 3.5 meter slab width having thickness of 20 cm and f = 1.5, for the following two cases.

(i) For plain cement concrete, $S_c = 0.8$ kg/cm^2

(ii) For reinforcement cement concrete, 1.0 cm dia. bars at 0.30 m spacing.

3 Attempt any TWO parts of the following : **6×2=12**

(a) Calculate the length of transition curve for a design speed of 80 kmph at horizontal curve of radius 300 m in rural area. Assume suitable data.

(b) What is traffic rotary ? What are its advantages and limitations in particular reference to Indian conditions ?

(c) Explain IRC method of rigid pavement design.

4 Attempt any TWO parts of the following : **6×2=12**

(a) Explain the CBR method of pavement design. How is this method useful to determine thickness of component layers ?

(b) Discuss the various types of Traffic signals.

(c) Write the short notes on the following :

(i) Sheet asphalt

(ii) Mastic asphalt.