Roll No. ....

24288

B. Tech. 5th Sem.
(Civil Engg.) XI
Examination – December, 2013

TRANSPORTATION ENGG. – I

'F' Scheme
Paper : CE-303-F

Time : Three hours]　　　　　　[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. 1 is compulsory. Attempt *five* questions, selecting at least *one* from each Section.

1. (a) Explain obligatory points. With sketches, discuss how these control the alignment.　　7

   (b) What are the factors on which stopping sight distance depends? Explain briefly.　　8

   (c) Discuss Fundamental Diagram of Traffic Flow.　　5

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SECTION – A

2. (a) Write a short note on Saturation system. 10

(b) Find the safe overtaking sight distance for a highway having a design speed of 100 kmph. Assume all other data suitably. 10

3. (a) Compare first and second 20 years road plans. Discuss the merits of each. 8

(b) The speeds of overtaking and overtaken vehicle are 80 and 60 kmph respectively. If the acceleration of the overtaking vehicle is 2.5 kmph per second, calculate the safe passing sight distance for : 12

(i) One-way traffic (ii) Two-way traffic.

SECTION – B

4. (a) A radius of 250m has to be provided at a locality due to site restrictions in a National Highway in plain terrain. Design the super elevation. Should there be restriction in speed? 10

(b) Write a descriptive note on Grade Compensation on curves. 10

5. (a) What is traffic rotary? What are its advantages and limitations? 12

(b) What are the advantages and disadvantages of traffic signals? 8

SECTION – C

6. Explain briefly the Marshall method of mix design. 20

7. (a) Explain briefly the principle of the various tests on road stones; specify the desirable values of the test results. 10

    (b) What do you understand by Adzing of sleeper? Why it is provided? 10

SECTION – D

8. List various types of Yards. Discuss Marshalling yard, its functions, and types. 20

9. (a) Explain the construction of a tunnel in hard rocks by Heading and Bench Method. 12

    (b) Write a note on lining of tunnels. 8