

Roll No.

24288

B. Tech. 5th Sem. (Civil Engg.)

Examination – December, 2011

Paper : CE-303-F

(Transportation Engg. - I)

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 any **five** questions, selecting at least **one** question from each Section.

1. (a) Write short note on Level of Service. 5
(b) Explain Camber. What are the objectives of camber ? Discuss the factor on which the amount of camber to be provided depends. Specify the

recommended ranges of camber for different types of pavement surfaces. 8

- (c) Discuss functions of sleepers. What are the advantage and disadvantages of wooden sleepers ? 7

SECTION – A

2. (a) Briefly explain the Macadam's method of road construction. Why this method is considered scientific one ? 10
- (b) Explain the necessity and objects of highway planning. 10
3. (a) Derive an expression for finding the stopping sight distance at level and at grades. 10
- (b) Find the stopping and overtaking sight distance for a 3.5 m wide road, design speed of 65 kmph. Assume suitable data. What are sight distance requirements at a gradient of 1 in 40 ? 10

SECTION – B

4. (a) Calculate the maximum allowable speed on a horizontal curve of radius 350m. 10

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

5. (a) What do you understand by Level of Service ? Discuss in detail. 10

(b) What are the various types of parking facilities designed for traffic need ? Compare kerb parking with off-street parking. 10

SECTION - C

6. Explain CBR and the test procedure for laboratory. How are the results of the test obtained and interpreted ? 20

7. (a) List different types of cutbacks. When are these used ? Discuss in brief the tests carried out on cutback bitumen. 10

(b) What is cant deficiency ? A 6 degree curve branches off from a 3 degree main curve in an opposite direction in the layout of a B.G. yard. If the speed on branch line is limited to 35.5 km.p.h, determine the speed restriction on the main line.

10

SECTION – D

8. (a) Draw a labeled sketch of right hand turnout. 10
- (b) What should be the actual ruling gradient (i.e. compensated gradient), if the ruling gradient as 1 in 250 has been fixed on a B.G. section and a horizontal curve of 3° is also to be introduced over it. 10
9. Giving suitability of each, discuss various shapes of tunnel sections. 20
