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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(CE) (2011 Onwards) (Sem.-5)
TRANSPORTATION ENGINEERING-I
Subject Code : BTCE-504
Paper ID : [A2081]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a. List the important Characteristics of road transport.
- b. What is alligator cracking in roads?
- c. List the basic requirements of a Highway Materials.
- d. Distinguish between Camber and Superelevation.
- e. List the various engineering Surveys in Highway Projects.
- f. Why extra widening is provided on curves?
- g. What are the requirements of Highway drainage?
- h. List the vehicular characteristics affecting the road design.
- i. What is spot speed and what is its importance?
- j. List the various types of road accidents.

SECTION-B

2. A 7.0 m state highway passing through a plain terrain has a horizontal curve of radius equal to ruling minimum radius. Calculate :
 - a) Superelevation
 - b) Extrawidening
 - c) Length of transition curve.
Assume design speed of 80 Kmph and provide the superelevation by the rotation of the pavement about the center line. Assume any data.
3. Explain briefly the method of Construction of Concrete Roads.
4. Name the Laboratory tests conducted to determine the suitability of aggregates for road construction and explain the significance of each test
5. How are Bituminous pavements maintained?
6. What are the difficulties experienced in the construction of the roads in waterlogged area and what are the remedial measures adopted?

SECTION-C

7. Explain the procedure for carrying the Origin and destination studies.
8. Calculate the superelevation required for a concrete road 7.5 m wide on a curve of 800 m radius for a design speed of 50 Kmph.
9. Discuss the various Vehicular Air Pollution Mitigation measures.