

B.Tech. (Sem. -5<sup>th</sup>)

**TRANSPORTATION ENGINEERING - I**

**SUBJECT CODE : CE - 311**

**Paper ID : [A0617]**

[Note : Please fill subject code and paper ID on OMR]

**Time : 03 Hours**

**Maximum Marks : 60**

**Instruction to Candidates:**

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

**Section - A**

**Q1)**

**(10 × 2 = 20)**

- a) List the different types of roads in Indian conditions.
- b) Why transition curves are provided on curves.
- c) List the various types of equipments used on Indian roads.
- d) What are the requirements of Highway lighting.
- e) Write the specifications of WBM.
- f) List the techniques of pavement Evaluation.
- g) Draw a cross section of a National Highway in cutting.
- h) Write the causes of road accidents.
- i) List the noise pollution standards on Indian roads.
- j) How vertical curves are designed. List the various steps.

## Section - B

(4 × 5 = 20)

- Q2) Explain the stepwise procedure for construction of cement concrete pavements.
- Q3) Calculate the stopping sight distance for
- Two lane Highway having two way traffic.
  - Single lane having two way traffic. Design speed = 50kmph,  $f = 0.4$ , Reaction time = 3 seconds.
- Q4) Explain briefly the significance of various phases of traffic Engg. studies. Also, explain in brief the special problems due to mixed traffic in urban areas.
- Q5) Write short note on pavement distress and remedial measures.
- Q6) Calculate the extra widening required for a pavement of width 7m on a horizontal curve of radius 250m, if the longest wheel base is 7m and Design speed is 70kmph.

## Section - C

(2 × 10 = 20)

- Q7) Describe the tests performed on the aggregates to be used in road construction.
- Q8) Explain the road user characteristics for traffic design and performance.
- Q9) Explain the various types of signals. How the signal timings are decided based on Webster's method.

