

Roll No.

Total No. of Questions : 09]

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B. Tech. (Sem. - 5th)
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

(10 × 2 = 20)

- Q1) a) Give the classification of urban Roads.
b) Why camber is required on the roads.
c) Distinguish between Design speed and minimum speed.
d) Why Traffic volume studies are carried out.
e) List the types of signal systems.
f) List the causes of failure of flexible pavements.
g) What are the requirements of an ideal transition curve in roads.
h) Why superelevation is provided on curves.
i) What is limiting gradient.
j) Why impact test is conducted on road aggregates.

Section - B

(4 × 5 = 20)

- Q2) Derive an expression for extrawidening to be provided on curves.
Q3) Compare the different modes of transportation.
Q4) Explain and two methods for carrying out O x D study.
Q5) Explain the vehicular characteristics which affect highway Design.
Q6) Calculate the stopping sight distance for
(a) Two lane highway with two way traffic.
(b) Single lane Road having two way traffic
Design speed = 50 Km/h $f = 0.4$
Reaction Time = 3 seconds.

Section - C

(2 × 10 = 20)

- Q7) Explain the various steps for the design of Traffic signals.
Q8) Explain how traffic volume and speed data are presented for use in traffic design and performance.
Q9) Write short note on any four of following:
(a) Vehicular Emission.
(b) Surface Drainage of Roads.
(c) Road patterns.
(d) Valley curves.
(e) Arboriculture.

