

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Questions: 09

Total No. of Pages: 02

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

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS 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.
4. Assume suitable data, if missing.

SECTION-A

1.
 - a) Transportation engineering is an interdisciplinary branch of engineering'. Comment.
 - b) Define design speed. What are the factors influencing it?
 - c) Write a short note on WMM.
 - d) What do you mean by Non-Fatal Accident?
 - e) What do you mean by PCU and why it is important for traffic volume studies?
 - f) Explain the necessity and objects of highway planning'?
 - g) Explain the term traffic capacity?
 - h) What are the requirements of highway drainage?
 - i) Differentiate between slip and skid.
 - j) Write the difference between Bituminous and concrete roads.

SECTION-B

2. Explain with neat sketches various road patterns.
3. Name the laboratory tests conducted to determine the suitability of aggregates for road construction and explain the significance of each test.
4. Derive an expression for extra widening on curves.
5. Draw collision diagram, showing all symbols in it.

6. What do you mean by ITS and what is the use of ITS in road transport.

SECTION- C

7. Compare IRR method, NPV method and B/C ratio method of highway economics.

8. Write short notes on

- a) Overturning Effect
- b) Skidding Effect
- c) Analysis of superelcvation

9. Explain

- a) Various types of failures in flexible pavements
- b) Pollution mitigation measures
- c) Construction in water logged areas