

Code No: R194201D

R19

Set No. 1

IV B.Tech II Semester Regular Examinations, April – 2023

ROAD SAFETY ENGINEERING

(Civil Engineering)

Time: 3 hours

Max. Marks: 75

*Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks*

UNIT I

- 1 a) Write about speed and its effects on road safety? [7]
b) Explain about Road Safety improvement strategies. [8]

(OR)

- 2 a) Discuss the role of road and its effect on accidents? [7]
b) Summarise the elements of a road safety plan? [8]

UNIT II

- 3 a) Explain about the use of regression methods in accident research? [7]
b) The accident records for three consecutive years at an uncontrolled junction indicate the following number of accidents. Calculate the probability of occurrence of four accidents per year at the location.

Year	Number of accidents
1972	3
1973	6
1974	9

[8]

(OR)

- 4 a) Discuss the methods to identify and prioritize black spots? [7]
b) Describe the steps to be followed to analyse any accident? [8]

UNIT III

- 5 a) Discuss the various stages of a road safety audit? [7]
b) Discuss how highway design can enhance road safety? [8]

(OR)

- 6 a) Summarise the current practices the world over with reference to highway work zone safety audits for safety improvements? [7]
b) Discuss any case study with reference to road safety audit? [8]



UNIT IV

- 7 a) Explain the Energy theory concept w.r.t crash reconstruction? [7]
b) Vehicle A is approaching from west and vehicle B from south. After collision A skids 60^0 north of east and B skids 30^0 south of east. Skid distance before collision for A is 18m and B is 26m. The skid distances after collision are 30m and 15m respectively. Weight of A and B are 4500kg and 6000kg respectively. Skid resistance of pavement is 0.55m. Determine the pre-collision speed. [8]
(OR)
- 8 a) What is accident reconstruction and what data is required to determine the pre-collision speed? [7]
b) Discuss the variables involved in pedestrian crashes? [8]

UNIT V

- 9 a) Discuss the various engineering measures that may be useful to prevent accidents? [7]
b) Discuss the role of various stakeholders in ensuring traffic safety? [8]
(OR)
- 10 a) Discuss the various traffic management measures for accident prevention? [7]
b) Summarise the details on Indian (National) Road Safety Policy of 2010. [8]

