APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

SEVENTH SEMESTER B.TECH HONOURS DEGREE EXAMINATION, December 2019

Course code: 01CE6511

Course Name: HIGHWAY DESIGN AND SAFETY

Max. Marks: 60   **Duration: 3 hrs**

Marks

PART A (Answer any two full Questions)

1a	Explain the role of road, vehicle and human factors in road safety	5
b.	What is the significance of highway design in safety	4
2a	Analyse the functions of transition curves in the horizontal alignment	5
b.	Find the total width of a pavement on a horizontal curve for a new national highway to be aligned along a rolling terrain with a ruling minimum radius. Assume necessary data	4
3	Distinguish between at grade intersection and grade separated intersection with figures	9

PART B(Answer any two full Questions)

4a	Explain the role of collision diagram in accident analysis	4
b	Analyse the significance of statistical models in safety analysis with an illustration	5
5a	Explain the various types and causes of road crashes	4
b	Evaluate a crash factor matrix for accident analysis	5
6	Write short notes on:i) accident forensic investigation ii)expert analysis and iii) accident reconstruction	9

PART C(Answer any two full Questions)

7	Analyse the safety issues in i) vulnerable road users ii) public transport iii) bus bays and iv) bus stops	12
8	Evaluate the various steps involved in a road safety audit with the help of an audit checklist	12
9	Write short notes on i) Forgiving designs ii) retro reflectivity of road signs and markings iii) safety issues at construction zones	12