APJ ABDULKALAM TECHNOLOGICAL UNIVERSITY
08 PALAKKAD CLUSTER

Q. P. Code : TE0819215-I **(Pages: 3)** **Name:.....**

Reg. No:.....

FIRST SEMESTER M.TECH. DEGREE EXAMINATION DECEMBER 2019

Branch: Civil Engineering **Specialization: Transportation Engineering**

08CE6215 ROAD SAFETY ENGINEERING

Time:3 hours **Max. marks: 60**

Answer all six questions.

Modules 1 to 6: Part 'a' of each question is compulsory and answer either part 'b' or part 'c' of each question.

Q. No.	Module 1	Marks
1.a	Define Collision diagram.	3
	Answer b or c	
b	Examine the reasons for road accidents in our nation.	6
c	Prepare a flow chart to discuss about different types of road accidents that we commonly observed in our nation.	6

Q. No.	Module 2	Marks
2.a	Differentiate Crash and Accident.	3
	Answer b or c	
b	Write a review about sustainable road safety principles.	6
c	Analyse the following situations and give some suggestions as solution i) Railroad crossing accidents ii) Night time accidents	6

Q. No.	Module 3	Marks
3.a	Briefly explain the classification of accidents based on nature of injury.	3

Answer b or c

b	Explain 5E's.	6
c	Explain the methodology to be adopted for improving accident black spot in a road network.	6

Q. No.	Module 4	Marks
4.a	Define Accident rates.	3

Answer b or c

b	Differentiate between Over dispersion and Under dispersion.	6
c	Explain the different enforcement measures adopted to prevent accidents.	6

Q. No.	Module 5	Marks
5.a	Define Energy Theory.	4

Answer b or c

b	The following factors influencing road crashes. Justify each factor with suitable examples. Factors are i) Traffic Volume ii) Width of Carriageway iii) Sight Distance iv) Gradients	8
c	Two vehicles travelling in the same lane have masses 3000kg and 2500kg. The velocity of rear vehicles after striking the leader vehicle is 25kmph and the velocity of leader vehicle is 56kmph. The coefficient of restitution of the two vehicle system is assumed to be 0.60. Determine the pre-collision speed of the two vehicles.	8

Q. No.	Module 6	Marks
6.a	What are the factors should be considered at the time of highway construction?	4
	Answer b or c	
b	Explain what are the effects of traffic volume, pavement width and curves on accident.	8
c	Explain Geometric Design Consistency with the help of a flow chart.	8