School of Engineering
M.TECH Transportation Engineering
Mid Term Examination - Nov 2023

Duration : 90 Minutes
Max Marks : 50

Sem I - G1PD102T - Highway Geometric Design

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1)	Outline the the relationship between design speed and highway safety.	K2 (2)
2)	Define carriageway in the context of highway design.	K1 (3)
3)	Explain how vehicle characteristics influence highway design.	K2 (4)
4)	Compare and contrast different types of gradients.	K2 (6)
5)	Apply the grade compensation to a hill road having ruling gradient of 6% and radius 60 m.	K3 (6)
6)	Calculate the safe stopping sight distance for the descending gradient of 3% for a design speed of 80 km/h. Take coefficient of friction as 0.35 and total reaction time as 2 seconds.	K3 (9)
7)	Analyze the relationship between driver characteristics and accident statistics on highways.	K4 (8)
8)	Evaluate the impact of different curve radii on road safety.	K4 (12)

OR

	Assess the effectiveness of transition curves in reducing accidents on curves.	K4 (12)