Enrolment

## GUJARAT TECHNOLOGICAL UNIVERSITY M. E. - SEMESTER – I • EXAMINATION – WINTER • 2014

Subject code: 711308N Date: 05-12-2 Subject Name: Highway Geometric Design		code: 711308NDate: 05-12-2014Name: Highway Geometric Design	014	
Tiı	me: 1	0:30 am - 01:00 pm Total Marks: 70		
Instructions:				
	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full mark.		
Q.1	(a)	What is camber? What are the objects of camber? Discuss the factors affecting camber. Specify the recommended ranges of camber for different types of pavement surfaces	07	
	<b>(b</b> )	Derive an expression for calculating the overtaking sight distance on a highway.	07	
Q.2	(a)	Determine the height of crown with respect to the edges of the road in the following cases: (a) WBM road 3.8m wide in areas of low rainfall (b) WBM road 7.0m wide in areas of heavy rainfall (c) Bituminous road 7.5m wide (d) concrete road 7.5m wide	07	
	<b>(b</b> )	Explain the procedure for designing ruling gradient.	07	
	<b>(b)</b>	Discuss the recommendations of IRC for alignment.	07	
Q.3	(a)	What is the importance of widening of pavement on horizontal curves? Explain mechanical widening.	07	
	<b>(b</b> )	How do the vehicular characteristics affect the Geometric Design standards? Explain briefly.	07	
		OR		
Q.3	(a)	What are the functions of median and curb? Mention the current Indian standards for them.	07	
	(b)	Discuss the factors to be considered in the design of sight distance at intersection.	07	
Q.4	(a) (b)	Explain the role of surveying equipments in setting up of transition curves Describe channelization	07 07	
		OR		
Q.4	(a) (b)	Write a note on set back distances Explain various principles of intersection design for safety of traffic.	07 07	
Q.5	(a)	Explain the factor to be considered in geometric design of rail-road level crossing in the urban and rural regions.	07	
	<b>(b</b> )	Explain the concept of geometric design of the fly over in the urban region. OR	07	
Q.5	<b>(a)</b>	Write a note on grade separated intersections.	07	
	<b>(b)</b>	Write a note on island geometrics	07	

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