Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC-Semester –V (May-2012) Examination

Subject code: X 50601

Subject Name: Highway Engineering

Date:14/05/2012

Time: 10.30 am – 01.00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain the objectives of Indian Road Congress.	**07**
	(b)	What are the factors affecting alignments of road? Explain in detail.	**07**
Q.2	**(a)**	Explain ruling, maximum and exceptional gradient.	**07**
	(b)	State the objects of widening of pavement on horizontal curves. What are the factors on which the design of widening depends? Explain.	**07**
		OR	
	(b)	Calculate the length of stopping distance for two way traffic in a single lane road. The design speed is 80 kmph. Assume reaction time of driver is 3 sec and coefficient of friction is 0.5 for sloping road with (i) Ascending slope of 2% (ii) Descending slope of 3%	**07**
Q.3	**(a)**	What are the various tests carried out on bitumen? Briefly mention the purpose of each test.	**07**
	(b)	Write a short note on "Los Angeles Abrasion test"	**07**
		OR	
Q.3	**(a)**	Explain the methodology of constructing cement concrete roads.	**07**
	(b)	Explain the maintenance of bituminous road.	**07**
Q.4	**(a)**	Differentiate between surface and sub surface drainage.	**07**
	(b)	Enlist the parts and functions of hill road components with neat sketch.	**07**
		OR	
Q.4	**(a)**	State the advantages of street lighting.	**07**
	(b)	Explain the significance of PPP models.	**07**
Q.5	**(a)**	Explain road user characteristics.	**07**
	(b)	What are the causes of road accidents? Explain.	**07**
		OR	
Q.5	**(a)**	State the advantages and dis-advantages of traffic signal.	**07**
	(b)	Explain various types of intersection at grade with sketch.	**07**

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