Seat No.:	eat No.: Enrolment No		
		GUJARAT TECHNOLOGICAL UNIVERSITY	
		BE - SEMESTER-V(New) • EXAMINATION – WINTER 2016	
Subject		de:2150601 Date:02/12	2/2016
•		me:Highway Engineering	# 2010
-			nlza. 70
Instruction		AM to 01:00 PM Total Mar	rks: /U
		tempt all questions.	
		ake suitable assumptions wherever necessary.	
		cures to the right indicate full marks.	
Q.1		Answer the following questions in short:	14
Q.1	1	Define highway engineering.	14
	2	What do you mean by PMGSY & NTPC?	
	3	Define safe passing sight distance.	
	4	What is superelevation?	
	5	Define ruling gradient.	
	6	What do you mean by ADT?	
	7	Define highway capacity.	
	8	What is traffic density?	
	9	What is plate bearing test?	
	10	Define emulsion.	
	11	What do you mean by ESWL?	
	12	What is traffic control device?	
	13	What is surface drainage?	
	14	What is 'PPP'?	
Q.2	(a)	State the objectives of preliminary survey in the highway alignment	03
		projects.	
	(b)		04
	(c)	State the objects of widening pavement on horizontal curves? What are	07
		the factors on which the design of widening depends?	
	(a)	OR A modifye of 250m has to be provided at a locality due to site most mixtions.	07
	(c)	A radius of 250m has to be provided at a locality due to site restrictions in a National Highway with design speed 100kmph.Design the super	07
		elevation. Should there be any restriction in speed?	
Q.3	(a)	What is routine maintenance of highway? State the items included	03
Q.S	(a)	under it.	05
	(b)	Explain the desirable properties of aggregates to be used in pavement	04
	(2)	construction.	•
	(c)	What is a land slide and how it occurs on hill roads? State how	07
	` /	prevention of land slide can be done	
		OR	
Q.3	(a)	Explain briefly the basic principles of soil stabilization.	03

(b) State the desirable properties of bituminous mix for pavement surface 04 course. (c) Describe step wise procedure of penetration test of bitumen. **07 Q.4** (a) State the functions of catch water drain. 03 **(b)** State the limitations of flexible pavements. 04 Explain the basic principle of CBR method of pavement design. State **07** (c) the advantages and disadvantages of it. State the factors affecting design and performance of rigid pavement. Q.4 03 (b) Explain how variation in moisture content affects flexible pavement 04

design.

	(c)	What is arboriculture? State the steps in operation of planting of trees on road side development.	07
Q.5	(a)	State the usefulness of spot speed studies with respect to traffic engineering.	03
	(b)	State the factors affecting traffic stream flow characteristics.	04
	(c)	State the various measures of enforcement that may be useful to prevent accidents on spots prone areas of road.	07
		OR	
Q.5	(a)	State the advantages and disadvantages of an overpass.	03
	(b)	What are the various types of road markings and their uses?	04
	(c)	State the concept of PCU value and the factors affecting PCU values.	07
