Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – I • EXAMINATION – WINTER • 2013

Subject code: 711303N **Date: 03-01-2014**

Subject Name: Highway Materials and Construction

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)**	What are the sources of surface water for which surface drainage is required? Discuss about treatments for embankment and cut slope protection.	**07**
	(b)	Discuss in brief about roadwork in desert, swampy and hilly area.	**07**
Q.2	**(a)**	Discuss factors affecting strength of soil-cement stabilization.	**07**
	(b)	Discuss about desired properties of aggregate as a material for highway construction.	**07**
		OR	
	(b)	Discuss about desired properties of bitumen as a material for highway construction.	**07**
Q.3	**(a)**	Explain use of various geotextile materials in highway construction.	**07**
	(b)	Discuss need of compaction and consolidation in highway construction.	**07**
		OR	
Q.3	**(a)**	Enlist desirable properties of soil. Write soil classification.	**07**
	(b)	Write about various methods of compaction and consolidation in brief.	**07**
Q.4	**(a)**	Discuss elements of embankment design for highway.	**07**
	(b)	Discuss about asphaltic concrete/bituminous concrete with advantages and disadvantages.	**07**
		OR	
Q.4	**(a)**	Explain Marshal method of mix design with test graphs.	**07**
	(b)	Explain construction of lean dry concrete subbase of highway concrete pavements.	**07**
Q.5	**(a)**	Write definition, objective and choice of binder for prime coat and tack coat.	**07**
	(b)	Explain stripping test for highway construction material.	**07**
		OR	
Q.5	**(a)**	Explain viscosity test for bitumen.	**07**
	(b)	What is screening and blending? Discuss in brief aggregate blending method.	**07**

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