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GUJARAT TECHNOLOGICAL UNIVERSITY

Su Tin	bject bject ne: 1 tructio 1. 2.	ME - SEMESTER- I (OLD course)• EXAMINATION - SUMMER 2015 Code: 711303N Date: 13/05/2015 Name: HIGHWAY MATERIALS AND CONSTRUCTION 10:30 am to 1:00 pm Total Marks: 70 ons: Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	15
Q.1	(a) (b)	Explain CBR test with significance of the test. Discuss in brief about different methods of soil stabilization as per type of soil and characteristics of soil.	07 07
Q.2	(a) (b)	Explain need, shape and design criteria for surface drainage. Explain stripping value test procedure with purpose of the test. OR	07 07
	(b)	Discuss about challenges in hilly area for highway construction along with remedial steps for safety.	07
Q.3	(a) (b)	Discuss asphalt mix design with material selection criteria. Discuss role of admixtures along with different types of admixtures used in mix design.	07 07
Q.3	(a) (b)	OR Explain aim and test procedure for penetration test on bitumen. Discuss about hot mix plant working with sketch.	
Q.4	(a) (b)	What are the desirable properties of the materials used for road construction? Discuss method of sample preparation along with need for Marshall stability test. OR	
Q.4	(a)	Explain method of highway construction for flexible pavement on embankment along with sketch showing all the layers.	07
	(b)	Discuss need and use of compaction and consolidation techniques in highway construction.	07
Q.5	(a) (b)	i. Use of geotextile material in highway construction.ii. Types of bituminous material.	04 03 07
0.5	(a)	OR Write in brief about following:	
Q.5	(a) (b)	 Write in brief about following: Macadam construction. Surface treatment. Write quality control criteria for following tests for highway construction material selection: Specific gravity test softening point test Abrasion test 	03 04 07
