

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – I • EXAMINATION – WINTER 2012****Subject code: 711303N****Date: 12-01-2013****Subject Name: Highway Materials and Construction****Time: 02.30 pm – 05.00 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) Enlist the methods of soil stabilization. Explain any one method. **07**
 (b) Discuss uses of geotextile materials. **07**

- Q.2** (a) Explain Marshall stability test on bituminous mix. **07**
 (b) Explain CBR test on soil. **07**

OR

- (b) (i) Aggregate blending methods. **04**
 (ii) What are admixtures? **03**

- Q.3** (a) What is the need of soil compaction? Explain how compaction is carried out? **07**

- (b) (i) Types of bituminous materials. **03**
 (ii) Road work in swampy area. **04**

OR

- Q.3** (a) What is the need of soil consolidation? Explain methods of soil consolidation. **07**

- (b) (i) Principles of soil stabilization. **03**
 (ii) Properties of soil. **04**

- Q.4** (a) Discuss about surface drainage with sketch. **07**

- (b) (i) Desired properties of aggregate. **03**
 (ii) Road work in desert. **04**

OR

- Q.4** (a) Discuss about subsurface drainage with sketch. **07**

- (b) (i) Write soil classification. **03**
 (ii) Road work in hilly area. **04**

- Q.5** (a) Write criteria for adopting flexible and rigid pavement. Also, draw cross section of flexible and rigid pavement. **07**

- (b) (i) Surface treatment. **03**
 (ii) Macadam construction. **04**

OR

- Q.5** (a) Write following for minimum five tests on bitumen. **07**

Sr.no.	Name of test	Name of Apparatus	Aim of test

- (b) Write following for minimum five tests on aggregate. **07**

Sr.no.	Name of test	Name of Apparatus	Aim of test	Min.value recommended.
