

GUJARAT TECHNOLOGICAL UNIVERSITY
ME Semester –IV Examination Dec. - 2011

Subject code: 741301**Date: 07/12/2011****Subject Name: Advances in Transportation Engineering****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 importance of Intelligent Transportation Systems (ITS). **07**
(b) Enlist various waste materials which can be used for highway construction. Explain in detail the application of any one of them. **07**

- Q.2** (a) Discuss: How ITS is used for travel and traffic management? **07**
(b) Why bituminous materials are required to be modified? Enlist various modified bituminous materials and describe any one of them with its IS requirements and testing procedures. **07**

OR

- (b) What do you understand by high performance concrete? What are its IS requirements and applications? **07**

- Q.3** (a) Explain how ITS can be applied to manage the urban travel demand? **07**
(b) What is Incident Management? Discuss how incidents can be managed by ITS? **07**

OR

- Q.3** (a) Describe the applications of ITS for commercial vehicle operations and inter modal freight. **07**
(b) Give a brief note on “Smart Highways”. **07**

- Q.4** (a) Discuss: How ITS can be applied for public transportation operations and electronic payment services? **07**
(b) Give a brief note on “Stone Matrix Asphalt”. **07**

OR

- Q.4** (a) Explain “Advanced vehicle control and safety systems” using ITS. **07**
(b) Write a short note on “Fiber Reinforced Concrete”. **07**

- Q.5** (a) Describe the necessity of Multi grade bitumen and its characteristics. **07**
(b) Explain the micro-surfacing process and its benefits. **07**

OR

- Q.5** (a) Why anti-stripping additives are necessary in bituminous mixes? What are their requirements? **07**
(b) Explain the “Superpave” in the context of binders, aggregates and compaction. **07**
