

GUJARAT TECHNOLOGICAL UNIVERSITY
ME - SEMESTER-IV • EXAMINATION- WINTER • 2015

Subject Code: 741301**Date: 05/12/2015****Subject Name: Advances in Transportation Engineering****Time: 2:30 PM TO 5:00 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 do you understand by Intelligent Transportation System (ITS)? How is it useful in transportation network operations? **07**
- (b) Describe in detail the Advanced Traveler information systems. **07**
- Q.2** (a) Differentiate between: High strength concrete and High performance concrete. Where they are generally used? Why? **07**
- (b) Where do you suggest 'Micro surfacing'? Explain its application and benefits. **07**
- OR**
- (b) Compare the suitability and applicability of various fibre materials commonly used in fibre reinforced concrete? What way the length, diameter, proportions and dispersion of fibre affect the quality of fibre-reinforced concrete? **07**
- Q.3** (a) Explain with example the application of ITS in Travel demand management. **07**
- (b) What is Smart Highway? How will affect road safety? **07**
- OR**
- Q.3** (a) What is Smart vehicle? How will it affect the road user? **07**
- (b) Describe adaptive traffic control system with examples. **07**
- Q.4** (a) Why anti-stripping additives are necessary in bituminous paving mixes? What are their functions and requirements? **07**
- (b) How will ITS affect the road pricing? Explain any example related to the above for Indian scenario. **07**
- OR**
- Q.4** (a) Explain in detail "Electronic payments, toll collection and fare collection". **07**
- (b) Explain by drawing sketch public transportation management system by satellite. **07**
- Q.5** (a) Which are the recyclable-waste materials can be successfully used highway construction? Explain any one of them in details with respect to its specifications and applications. **07**
- (b) What are advantages of Porous asphalt-mix? How it is produced and tested as per IS specifications? **07**
- OR**
- Q.5** (a) Explain clearly difference between Multi-grade bitumen and Modified bitumen binder. Which properties are mostly affected when crumb-rubber is added to 80/100 bitumen? Explain briefly. **07**
- (b) What is super pave system? Why is it innovative? Can super pave be used for both base and surface mixes? List the steps in the super pave mix design. **07**