Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER II (NEW) – • EXAMINATION – SUMMER 2016

Subject Code: 2721313 **Date: 27/05/2016**

Subject Name: Advances in Transportation Engineering

Time:10:30 am to 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 working of automatic toll collection system? Discuss its advantages & limitations.	**07**
	b)	Explain the difference between Penetration grade & viscous grade bitumen. Which one is currently considered for pavement design? Why?	**07**
Q 2	**a)**	Describe Adaptive Traffic Control System with examples.	**07**
	b)	Discuss: ITS applications in highway accident prevention.	**07**
		OR	
	b)	What are admixtures? List different types of admixtures and their influence on performance of bituminous Pavement.	**07**
Q 3	**a)**	What is Area traffic control system? Explain its working.	**07**
	b)	Describe in detail the Advanced Traveler information systems.	**07**
		OR	
Q 3	**a)**	Write a note on Automated highways.	**07**
	b)	Describe the applications of ITS for commercial vehicle operations and inter modal freight.	**07**
Q 4	**a)**	Discuss: How ITS is used for travel and traffic management?	**07**
	b)	Write note on Modified Bitumen Emulsion.	**07**
		OR	
Q 4	**a)**	Where do you suggest the use of stone matrix asphalt? Briefly explain its mix design	**07**
	b)	Which are the desirable properties of recycled concrete aggregate? How the presence of contaminants in recycled aggregate may harm the performance of concrete?	**07**
Q 5	**a)**	Write an explanatory note on Super Pavement concept.	**07**
	b)	What is meant by High Performance Highway Construction Materials? Where and how do you apply Fly ash in highway construction?	**07**
		OR	
Q 5	**a)**	Where do you suggest 'Micro surfacing? Explain the microsurfacing process of mixing and laying system.	**07**
	b)	Describe in detail Porous asphalt-mix? Briefly explain the advantages of the same.	**07**

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