Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E –IIst SEMESTER–EXAMINATION – JULY- 2012

Subject code: 1721906 **Date: 12/07/2012**

Subject Name: Pavement Design and Analysis

Time: 10:30 am – 13:00 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)**	Discuss the basic difference between airport and highway pavement.	**07**
	(b)	Discuss briefly the maximum wheel load factor in pavement design.	**07**
Q.2	**(a)**	State the principle steps of asphalt institute method for pavement design.	**07**
	(b)	Calculate the deflection of the surface of a flexible pavement due to a wheel load of 40 KN and a tyre pressure of 0.5 MN/m². The value of E of the pavement and subgrade may be assumed to be uniformly equal to 20 MN/m².	**07**
		OR	
	(b)	What is the criticism leveled against the CBR method?	**07**
Q.3	**(a)**	Explain Burmisters layered system method of pavement design.	**07**
	(b)	Explain briefly radius of relative stiffness and radius of resisting section.	**07**
		OR	
Q.3	**(a)**	Explain the Westergaards Concept for temperature stresses.	**07**
	(b)	Discuss the design details of dowel bar for rigid pavement.	**07**
Q.4	**(a)**	State the basic difference between structural and functional failure. Also state the symptoms, causes and remedial measures of defects due to fatty surface.	**07**
	(b)	Write a short note on mud pumping.	**07**
		OR	
Q.4	**(a)**	What are the various causes of formation of waves and corrugations in flexible pavement? Suggest remedial measures of it.	**07**
Q.4	**(b)**	State the typical failures in rigid pavements. Write a short note on scaling of cement concrete roads.	**07**
Q.5	**(a)**	Explain the principle and uses of Benkelman beam test.	**07**
	(b)	Write a short note on CRC pavements.	**07**
		OR	
Q.5	**(a)**	Write a short note on Prestressed concrete slab.	**07**
	(b)	Explain pavement serviceability index.	**07**

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