

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**
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**
(b)

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**
