

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – WINTER • 2014****Subject code: 1721302****Date: 03-12-2014****Subject Name: Pavement Design and Evaluation****Time: 02:30 pm - 05:00 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 ESWL & EWL? Discuss factors influencing them. **07**
 (b) Discuss the effect of repeated application of load on Pavement. Discuss about equivalent load factors for different types of repetitive loading. **07**

- Q.2** (a) Explain the importance of Highway Drainage? What Precautions should be taken in designing drainage for Pavement? Discuss Procedure to design filter for drainage. **07**
 (b) Explain the CBR method of Pavement Design by Cumulative Standard axle load concept. **07**

OR

- (b) Explain the Terms: Tyre Pressure, contact pressure, inflation pressure. Explain how it influences the Pavement surface in flexible & rigid Pavement. **07**
- Q.3** (a) Distinguish between rigid & flexible Pavement. **07**
 (b) Write a note on Triaxial method of Pavement design. Under what conditions the method is advantageous? **07**

OR

- Q.3** (a) Explain the significance of Joints in rigid Pavement? Discuss types of joints in rigid Pavements? **07**
 (b) Explain Group index method of Pavement Design. **07**

- Q.4** (a) Calculate design repetitions for 20 Years Period for various wheel load equivalent to 4082kg wheel load using below mentioned data on a four lane road. **14**
- | Wheel load in Kg | ADT(Both directions) | % of total Traffic volume |
|------------------|----------------------|---------------------------|
| 2268 | 215 | 13.17 |
| 2722 | | 15.30 |
| 3175 | | 11.76 |
| 3629 | | 14.11 |
| 4082 | | 6.21 |
| 4536 | | 5.84 |

OR

- Q.4** (a) Discuss different types of stresses in Rigid Pavement? What is its influence on Pavement structure? **14**
- Q.5** (a) Write Procedure to design an overlay for a damaged Pavement surface. **07**
 (b) Write a note on Burmister layered concept of Pavement Design? How is it advantageous as compared to other available design concepts? **07**

OR

- Q.5** (a) List different Test carried on Pavement to evaluate its Performance. **07**
 (b) Write a note on failures in Pavement. **07**
