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## 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. 0.1 Explain ESWL & EWL? Discuss factors influencing them. 07 (a) Discuss the effect of repeated application of load on Pavement. Discuss about **07** (b) equivalent load factors for different types of repetitive loading. Explain the importance of Highway Drainage? What Precautions should be taken in Q.207 designing drainage for Pavement? Discuss Procedure to design filter for drainage. Explain the CBR method of Pavement Design by Cumulative Standard axle load **07 (b)** concept. OR Explain the Terms: Tyre Pressure, contact pressure, inflation pressure. Explain how 07 it influences the Pavement surface in flexible & rigid Pavement. Q.3 Distinguish between rigid & flexible Pavement. 07 (a) Write a note on Triaxial method of Pavement design. Under what conditions the **(b)** 07 method is advantageous? OR Explain the significance of Joints in rigid Pavement? Discuss types of joints in rigid 0.3 **07** Pavements? Explain Group index method of Pavement Design. 07 **(b) Q.4** Calculate design repetitions for 20 Years Period for various wheel load equivalent 14 to 4082kg wheel load using below mentioned data on a four lane road. 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 Discuss different types of stresses in Rigid Pavement? What is its influence on 14 0.4 (a) Pavement structure? Q.5 Write Procedure to design an overlay for a damaged Pavement surface. 07 (a) **(b)** Write a note on Burmister layered concept of Pavement Design? How is it 07 advantageous as compared to other available design concepts? **Q.5** List different Test carried on Pavement to evaluate its Performance. **07** (a) Write a note on failures in Pavement. 07 **(b)** 

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