Seat No.:	Enrolment No
GUJARAT TECHNOLOGICAL UNIVERSITY	
PDDC - SEMESTER-V • EXAMINATION - SUMMER 2013	

Subject Code: X50601 Date: 10-05-2013 **Subject Name: Highway Engineering** 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** What are the objectives of highway planning? Give classification of highways **07** according to Nagpur road plan. (b) Explain (i) Central Road Fund (ii) Indian Road Congress (iii) Indian Motor **07** vehicle act. **Q.2** Explain the factors which control the highway alignments. 07 **(b)** What is the necessity of cross slope? Draw the sketch of shapes of cross s lopes. 07 **(b)** Explain by drawing sketch single lane and two lane pavements. 07 Q.3(a) Draw the fully dimensioned sketch of national highway in embankment. **07** (b) Calculate safe stopping sight distance for design speed of 5 07 (a) Describe the test procedure of "Aggregate impact test". 0.3 05 (b) Calculate the minimum sight distance required to avoid head on collision of two **09** cars approaching from opposite direction at 90.0 and 60.0kmph. assume Reaction time 2.5 seconds. coefficient of friction 0.7 brake efficiency = 50%What are the road pavements? Draw the sketch of rigid and flexible pavements. **07 Q.4 (b)** Describe the steps of construction procedure of W.B.M. roads. **07** OR (a) Describe the test procedure of softening point test for bituminous material. **07 Q.4** (b) What is the necessity of highway drainage system? Draw the sketch of surface 07 drainage system of urban roads. What is the human reaction time? Describe vehicular dimensions with sketch. 07 0.5 (a) (b) Define traffic volume count. Describe procedure of traffic volume count. **07** Q.5 (a) What are the applications of origin and destination studies? **07** (b) What are the purposes of road side plantations? Draw the sketch of trees and **07** Shrubs on urban roads
