

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – SUMMER 2013****Subject Code: 150601****Date: 14-05-2013****Subject Name: Highway Engineering****Time: 10.30 am - 01.00 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 the objects of highway planning. State the basic principles of planning to meet the objectives. **07**
- (b) State to explain the general points which need to be considered for ideal location of bridges. **07**

- Q.2** (a) Calculate the maximum permissible speed on a horizontal curve of radius 125 m of a highway designed for a speed of 65 km/hr to carry mixed traffic, if the super elevation is not to exceed 7 percent. **07**
- (b) Discuss the factors to be considered in deciding the sight distance at intersection. **07**

OR

- (b) Explain with the aid of neat sketches the methods of eliminating camber and introduction of super elevation. **07**

- Q.3** (a) Discuss the need for off-street parking. Explain briefly the types of off-street parking facilities. **07**
- (b) What are the various types of traffic markings commonly used? What are the uses of each? **07**

OR

- Q.3** (a) Explain various measures for the reduction in accident rates. **07**
- (b) Indicate how the traffic volume data are presented and the results used in traffic engineering. **07**

- Q.4** (a) Define cutback bitumen. State different types of cutbacks. When are these used? Enlist the tests carried out on cutback bitumen. **07**
- (b) State the stepwise method of construction of gravel road. **07**

OR

- Q.4** (a) Explain the plate bearing test procedure carried out on subgrade soil. **07**
- (b) State the necessity of maintenance of roads. Explain briefly the classification of maintenance operation. **07**

- Q.5** (a) What is a land slide and how it occurs on hill roads? State how prevention of land slide can be done. **07**
- (b) State the difference between road safety reviews and road safety audit. **07**

OR

- Q.5** (a) Define catch water drain. State the functions of it with neat labeled sketch in hilly areas. **07**
- (b) Discuss the important factors which are to be considered in the design of highway lighting. **07**
