

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- Vth SEMESTER-EXAMINATION – MAY/JUNE - 2012****Subject code: 150601****Date: 01/06/2012****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** (a) Explain the classification of roads based on location and function as suggested in the Nagpur Road Plan. **07**
- (b) Explain obligatory points. With sketches, discuss how these control the alignment. **07**

- Q.2** (a) What is sight distance? Describe factors affecting sight distance. Explain types of sight distance with neat sketch. **07**
- (b) Write a short notes on : **07**
- (1) Shoulders
 - (2) Kerbs

OR

- (b) Calculate the extra width of a pavement required and superelevation on a horizontal curve of radius 300 m on a two lane highway for speed of 80 kmph. The design coefficient of lateral friction is 0.12 and wheel base is 6 m. **07**
- Q.3** (a) Describe the procedure of flakiness index test and elongation index test. **07**
- (b) Enlist the component parts of road pavement with neat sketch. Explain each component of road pavement in detail. **07**

OR

- Q.3** (a) Explain the necessity of soil investigations and subsoil exploration. **07**
- (b) Write a short note on design of flexible pavement by California Bearing Ratio Method. **07**

- Q.4** (a) Differentiate between surface drainage and sub surface drainage. **07**
- (b) Write a short note on prevention of land slide. **07**

OR

- Q.4** (a) What is arboriculture? Explain in detail. **07**
- (b) Explain the importance of road safety audit. **07**

- Q.5** (a) Explain the road user characteristics. **07**
- (b) What are the purposes of traffic volume studies? **07**

OR

- Q.5** (a) Explain various road signs with sketch. **07**
- (b) Write a short note **07**
- (1) At grade intersections.
 - (2) Rotary traffic islands.
