

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**Diploma Engineering Semester –IV Examination Dec. - 2011**

**Subject code: 340604**

**Date: 09/12/2011**

**Subject Name: Transportation Engineering**

**Time: 10.30 am – 1.00 pm**

**Total Marks: 70**

**Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. English version is considered Authentic.

- Q.1** (a) State various bitumen tests and explain any one in detail. **07**
- (b) Attempt any two **07**
- 1 Explain Super elevation with figure
  - 2 Draw typical cross section of NH, showing its components

- Q.2** (a) State Methods of sub surface drainage and discuss requirement of good drainage **07**
- (b) Enlist traffic control devices. Explain Traffic signs in detail. **07**

**OR**

- (b) Differentiate between Flexible pavement and rigid pavement. **07**

- Q.3** (a) State factors affecting selection of bridge site and discuss in detail **07**
- (b) Define following **07**  
Afflux, Free board, Vertical clearance, HFL, Formation level, Scour, Economic span

**OR**

- Q.3** (a) What is importance of bearing. Enlist types of bearings and explain any one. **07**
- (b) Explain various types of defects in bridge and their remedial measures. **07**

- Q.4** (a) Enlist types of crossing and characteristics of good crossing. **07**
- (b) Explain role of civil engineer in construction and maintenance of railway track. Explain pre monsoon and post monsoon maintenance for railway track. **07**

**OR**

- Q. 4** (a) Attempt any two **07**  
1 Differentiate between concrete and wooden sleepers.  
2 Grade compensation  
3 Functions of railway station.
- (b) List the tools for railway track maintenance and explain in detail their functions. **07**
- Q.5** (a) Classify harbor based on utility and location and state requirements of good harbor **07**  
(b) What are the types of navigational aids? Explain light house and beacon lights. **07**
- OR**
- Q.5** (a) Explain; **07**  
1 Road side arboriculture  
2 Overtaking sight distance.
- (b) Explain merits and demerit of wall type and mound type breakwater. **07**

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