

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – WINTER 2013****Subject Code: 160603****Date: 02-12-2013****Subject Name: Railway Bridge and Tunnel Engineering****Time: 02:30 pm to 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) Discuss about recent modern development for railway. **07**
 (b) What is the role of bearings in bridge? List various types of bearing with sketch. **07**
- Q.2** (a) Discuss about geometric design of railway track. **07**
 (b) Write dimensions and importance of Loading gauge and construction gauge. **07**
- OR**
- (b) Explain with sketch double slip arrangement in railway track. **07**
- Q.3** (a) Discuss about site selection criteria and investigation procedure for bridge construction. **07**
 (b) Discuss methods of testing and strengthening of bridges. **07**
- OR**
- Q.3** (a) Write components of a bridge. Also, write types of superstructure. **07**
 (b) I. Write in brief: Economic span of bridge. **04**
 II. Write in brief: Flooring joints for bridge. **03**
- Q.4** (a) Write advantages of tunnel in comparison to open cut and bridge construction. **07**
 (b) I. Write in brief: Drainage facility in tunnel **04**
 II. Write in brief: Dust control in tunnels. **03**
- OR**
- Q.4** (a) Explain the procedure adopted for tunneling in hard rock. **07**
 (b) I. Explain Portal and shaft. **04**
 II. Write in brief: Alignment of a tunnel **03**
- Q.5** (a) I. Write in brief about Flat footed rail section **03**
 II. Write in brief about Concrete sleepers **04**
 (b) State purpose of railway station provision. List out facilities required at railway station. **07**
- OR**
- Q.5** (a) I. Write in brief: Alignment of railway line. **03**
 II. List various Track fittings. **04**
 (b) Discuss role of Points, Crossings, Signals and Interlocking in railways. **07**
