

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-VI • EXAMINATION – WINTER • 2014**

**Subject Code: 160603****Date: 01-12-2014****Subject Name: Railway Bridge and Tunnel 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) What are the advantages of railways? **03**  
 (b) Compare roadway with railways. **04**  
 (c) Explain various types of rails with sketch. **07**
- Q.2** (a) Discuss factors affecting on the choice of gauge. **07**  
 (b) Explain loading gauge and construction gauge with figure. **07**
- OR**
- (b) Describe the common types of sudden rail failures. **07**
- Q.3** (a) Why are marshalling yards necessary? Describe the layout of a typical marshalling yard. **07**  
 (b) Write short note on sleeper density. **07**
- OR**
- Q.3** (a) Describe briefly the process of screening of ballast. **07**  
 (b) Draw a sketch of Right hand turnout and loose head type switch. **07**
- Q.4** (a) Write short note on suspension bridge. **07**  
 (b) Explain the methods of strengthening of bridge superstructure. **07**
- OR**
- Q.4** (a) Explain with neat sketches various types of bearing used for steel bridge. **07**  
 (b) Explain about ideal bridge site characteristics. **07**
- Q.5** (a) Enlist out various method of tunneling in hard rock. Explain drift method of tunneling rock. **07**  
 (b) Explain the process of mechanical ventilation in tunnel. **07**
- OR**
- Q.5** (a) State and explain the methods adopted for controlling dust inhalation. **07**  
 (b) Discuss about (i) Tunnel lining (ii) Lighting in tunnels. **07**

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