

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**PDDC - SEMESTER- III • EXAMINATION – SUMMER 2015**

**Subject Code: X30602****Date: 01/06/2015****Subject Name: RAILWAY, BRIDGE AND TUNNELS****Time: 02.30pm-05.00pm****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 factors controlling alignment of a railway track. **07**  
(b) Define super elevation. Where it is provided and why? **07**
- Q.2** (a) Explain various rail failures with neat sketches. **07**  
(b) Write a brief note on points and crossing. **07**
- OR**
- (b) Describe Coning of wheels and creep of rails. **07**
- Q.3** (a) Write short note on Marshalling yards. **07**  
(b) What are the functions of ballast in railway track? Describe the requirements of good ballast. **07**
- OR**
- Q.3** (a) Explain in brief: Gauge, Fish plate and Rail joint. **07**  
(b) What are the component parts of a bridge? Draw a neat sketch of bridge and explain importance of each of its component. **07**
- Q.4** (a) Discuss various factors which should be considered while selecting a site for a bridge. **07**  
(b) Enumerate different types of bridges and discuss any two types in brief. **07**
- OR**
- Q.4** (a) Discuss various types of bridge bearings in brief. **07**  
(b) Write a detailed note on bridge maintenance. **07**
- Q.5** (a) Explain Drift method of tunneling. **07**  
(b) Enumerate advantages and disadvantages of tunnel compared to open cut. **07**
- OR**
- Q.5** (a) Why the artificial ventilation is necessary in tunnels? Explain mechanical ventilation of tunnels. **07**  
(b) Enlist different methods of tunneling in soft ground. Explain any one method in detail. **07**

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