

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER – VI (OLD).EXAMINATION – WINTER 2016

Subject Code: 160603**Date: 22/10/2016****Subject Name: Railway , Bridge & Tunnel Engineering****Time: 10:30 AM to 01:00 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) Draw the sketches of different types of rail sections and discuss their merits and demerits. **07**
- (b) What are the functions of providing sleepers in railway? Give detail comparison of CI sleepers with Concrete sleepers. **07**
- Q.2** (a) Explain the function of ballast and different material used as ballast in railway track. **07**
- (b) Define ruling gradient, pusher gradient and momentum gradient. Also state the objectives for gradients. **07**
- OR**
- (b) State the order of erection of suspension bridge. **07**
- Q.3** (a) Explain with neat sketch commonly adopted shape of tunnels. **07**
- (b) Discuss role of Points, Crossings, Signals and Interlocking in railways. **07**
- OR**
- Q.3** (a) Discuss about site selection criteria and investigation procedure for bridge construction. **07**
- (b) Discuss about geometric design of railway track. **07**
- Q.4** (a) What is the role of bearings in bridge? List various types of bearing with sketch. **07**
- (b) Explain with sketch tunnel ventilation. **07**
- OR**
- Q.4** (a) Discuss about (i) Tunnel Lining and (ii) Lighting in Tunnels. **07**
- (b) Explain the followings with sketch: Tractive resistance, Buckling of rails, Negative super elevation. **07**
- Q.5** (a) Discuss about causes and effects of creep. Also write measures to reduce creep. **07**
- (b) Write classification of tunnels. Sketch various shapes of tunnels. **07**
- OR**
- Q.5** (a) Discuss the necessity and effect of coning of wheel with neat sketch. **07**
- (b) Explain briefly the various requirements of a passenger station yard **07**
