

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-VI Examination-Nov/Dec-2011

Subject code: 160603

Date: 25/11/2011

Subject Name: Railway, Bridge and Tunnel 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.

- Q.1** (a) Describe in brief the basic requirements of a good alignment. **07**
(b) Explain the coning of wheels with neat sketch **07**

- Q.2** (a) Compare the characteristics of wooden sleepers and reinforced concrete sleepers used on Indian Railways. **07**
(b) What are the functions of rails? Explain the various types of rails in use. **07**

OR

- (b) What are the effects of creep of rails? **07**

- Q.3** (a) Define the followings **07**
(a) Ruling gradient (b) Pusher gradient (c) Momentum gradient
(d) Compensated gradient for curvature.
(b) Explain briefly the functions of Fish Plate, Screw Spike and Tie bar in a railway track. **07**

OR

- Q.3** (a) Briefly explain semaphore signals and coloured light signals. **07**
(b) What do you understand by loading gauge? How is it different from the construction gauge? **07**

- Q.4** (a) What is meaning of “Economic span” for a bridge and state how it is determined? **07**
(b) What are the different types of bearings used in bridges? Discuss their relative merits. **07**

OR

- Q.4** (a) Write a short note on Suspension bridge **07**
(b) Enumerate various bridges with movable – span superstructures. **07**

- Q.5** (a) Explain Needle beam method of tunneling with neat sketch **07**
(b) How are shafts classified? **07**

OR

- Q.5** (a) Write a short note on Heading and bench method of tunneling in rock. **07**
(b) Why is lighting necessary tunnel? Describe various types of tunnel lights. **07**
