Seat No.:	Enrolment No.
-----------	---------------

## **GUJARAT TECHNOLOGICAL UNIVERSITY** PDDC - SEMESTER-III • EXAMINATION – WINTER 2013

20-12-2013

**Subject Name: Railway, Bridges and Tunnels** 

Time: 10.30 am - 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)	Give comparison (any seven points) between railway transportation and road	07
	<b>(b)</b>	transportation. Enumerate advantages of uniformity of gauges.	07
Q.2	(a) (b)	Explain in brief permanent way with neat sketch.  What is creep? How will you measure the creep? Explain.  OR	07 07
	<b>(b)</b>	Describe various failures of rails with neat sketches.	07
Q.3	(a) (b)	Derive the equation of super elevation for the railway track.  Explain various factors affecting selection of a bridge site.  OR	07 07
Q.3	(a) (b)	How will you calculate economic Span of a bridge? Explain. Explain concept of coning of wheels with neat sketch.	07 07
Q.4	(a) (b)	Give detailed classification of bridges.  What are the data required for bridge design?  OR	07 07
Q.4	(a) (b)	Explain the followings in brief with neat sketch  (i) Arch Bride  (ii) Suspension Bridge  Explain the functions of bearings.	07 07
Q.5	(a)	Define tunnel. Give the classification of tunnel	07
	<b>(b)</b>	Explain needle beam method for tunneling in soft ground.  OR	07
Q.5	(a) (b)	What are the objects of tunnel lining? Explain. Explain full face method for tunneling in hard rock.	07 07

\*\*\*\*\*