Seat No.: _____   Enrolment No._____

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

Subject Code: X 30602   **Date: 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 transportation.	**07**
	(b)	Enumerate advantages of uniformity of gauges.	**07**
Q.2	**(a)**	Explain in brief permanent way with neat sketch.	**07**
	(b)	What is creep? How will you measure the creep? Explain.	**07**
		OR	
	(b)	Describe various failures of rails with neat sketches.	**07**
Q.3	**(a)**	Derive the equation of super elevation for the railway track.	**07**
	(b)	Explain various factors affecting selection of a bridge site.	**07**
		OR	
Q.3	**(a)**	How will you calculate economic Span of a bridge? Explain.	**07**
	(b)	Explain concept of coning of wheels with neat sketch.	**07**
Q.4	**(a)**	Give detailed classification of bridges.	**07**
	(b)	What are the data required for bridge design?	**07**
		OR	
Q.4	**(a)**	Explain the followings in brief with neat sketch (i) Arch Bride (ii) Suspension Bridge	**07**
	(b)	Explain the functions of bearings.	**07**
Q.5	**(a)**	Define tunnel. Give the classification of tunnel	**07**
	(b)	Explain needle beam method for tunneling in soft ground.	**07**
		OR	
Q.5	**(a)**	What are the objects of tunnel lining? Explain.	**07**
	(b)	Explain full face method for tunneling in hard rock.	**07**

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