Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER–VIII • EXAMINATION – SUMMER 2013

Subject Code: X80904 **Date: 15-05-2013**

Subject Name: Advance Power System - II

Time: 10.30 pm - 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)**	Explain various applications of state estimations in a power system.	**07**
	(b)	Write a detail note on – "Power System Security".	**07**
Q.2	**(a)**	What is reactive power compensations? Explain it for redial transmission line for on no load and heavy loading condition.	**07**
	(b)	Describe process of restoration after a black out.	**07**
		OR	
	(b)	Explain load forecasting methodology with estimation of average and trend terms.	**07**
Q.3	**(a)**	Describe power system operating states with the help of a neat figure.	**07**
	(b)	Derive the expression of critical voltage and angle at receiving end at voltage stability limit.	**07**
		OR	
Q.3	**(a)**	Explain transition from an alert state to an emergency state of a power system with suitable example.	**07**
	(b)	What is voltage stability? Explain various types of voltage stability?	**07**
Q.4	**(a)**	Explain static and dynamic state estimation of power system.	**07**
	(b)	Write a short note on Indian scenario of power systems and Electricity act, 2003.	**07**
		OR	
Q.4	**(a)**	Describe structure of deregulated power systems in India.	**07**
	(b)	Derive expression of mid-point voltage of a transmission line in terms of real power flow and line length.	**07**
Q.5	**(a)**	Discuss vertically integrated utility in brief.	**07**
	(b)	Explain the causes and consequences of deregulated industrial load.	**07**
		OR	
Q.5	**(a)**	How is the long term load predictions done using econometric model? Explain.	**07**
	(b)	How is the reactive load forecasting done? Explain with example.	**07**

****