Enrolment No._____

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C.	- h łoo	GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-VIII EXAMINATION – SUMMER 2016	c
	•	et Code:180906 Date:16/05/2016)
Sı	ubjec	et Name:Advanced Power System II (Department Elective - II)	
Time:10:30 AM to 01:00 PM Total Marks:		' 0	
In	structi	ions:	
		 Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. 	
Q.1	(a)	Explain Static State Estimation of Power system.	07
Q.1	(b)	Describe different methods for Reactive power compensation for voltage stability	07
	(0)	enhancement.	07
Q.2	(a)	Show that for a lossless transmission two-bus mode, Q-V quantities are closely coupled.	07
	(b)	A 100km, 400-KV lossless transmission line has system reactance of $0.25\Omega/km$ per phase and source reactance of 25% of line reactance. Find voltage regulation when load side power factor is of 0.8 lagging. Assume a power transfer over the line is of 800MW.	07
		OR	
	(b)	Derive the expression for critical power angle of receiving end voltage at voltage stability limit for a two-bus power system.	07
Q.3	(a) (b)	Discuss relation of voltage stability and rotor angle stability. Draw and explain voltage profile and current profile of an uncompensated radial transmission line at No-Load condition.	07 07
		OR	
Q.3	(a)	Explain long term load forecasting using economic models.	07
	(b)	Discuss the power system restoration after a black-out.	07
Q.4	(a)	What is a vertically integrated power utility? State its limitations.	07
	(b)	Explain different power system operating states.	07
		OR	
0.4	(a)	State the objectives of short-term, medium-term and long term load forecasting.	07
Q.4	(a) (b)	Explain regression analysis for the short-term load forecasting.	07 07
Q.5	(a)	Explain application of power system state estimation in load dispatch centre.	07
•	(b)	Describe the treatment of Bad data in power system state estimation.	07
		OR	
Q.5	(a)	Discuss present scenario of power system structures in India.	07
-	(b)	Explain contingency analysis related to power system security analysis.	07
