Seat No: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII (OLD) EXAMINATION – WINTER 2018

Subject Code: 180906 **Date: 29/11/2018**

Subject Name: Advanced Power System -II

Time: 02:30 PM TO 05:00 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)**	What is voltage stability? Explain different types of voltage stability.	**07**
	(b)	Draw static security level diagram presented by stott et al.	**07**
Q.2	**(a)**	Draw a schematic diagram showing the information flow between the various function to be performed in an operations control center computer system.	**07**
	(b)	Explain least square approximation method for state estimation.	**07**
		OR	
	(b)	Write a short note on treatment of bad data and its detection.	**07**
Q.3	**(a)**	Draw a complete flowchart for contingency analysis.	**07**
	(b)	Prove that the receiving end voltage is extremely sensitive to any change in Power status at the receiving end bus.	**07**
		OR	
Q.3	**(a)**	Define and explain sensitivity factors.	**07**
	(b)	With the help of analytical concept of voltage stability for a two bus system, define critical receiving end voltage for an uncompensated lossless line transmission system operating at unity power factor.	**07**
Q.4	**(a)**	What is the role of load forecasting? How it reflects in current and future trends?	**07**
	(b)	Explain the characteristics of (i) the receiving end voltage of a basic power transmission system for varying system reactance and, (ii) the characteristic of voltage V/s system short circuit capacity for any fixed value of real power flow Considering leading, u.p.f. and lagging power factors load.	**07**
		OR	
Q.4	**(a)**	Explain auto regressive model for stochastic time series approach.	**07**
	(b)	Explain the operation of synchronous condenser in steady state using V-I characteristics. Provide its application.	**07**
Q.5	**(a)**	Explain structure of vertically integrated utility.	**07**
	(b)	What are the problems occurring in restoration after blackout.	**07**
		OR	
Q.5	**(a)**	Explain structure and entities in deregulated industries.	**07**
	(b)	Explain the V-P characteristics of static impedance load and dynamic impedance load for different tap position.	**07**

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