

**Improvement Test**

<b>Sub:</b>	<b>POWER SYSTEM OPERATION AND CONTROL</b>						<b>Code:</b>	<b>10EE82</b>	
<b>Date:</b>	23/ 05/ 2018	<b>Duration:</b>	90 mins	<b>Max Marks:</b>	50	<b>Sem:</b>	8th	<b>Branch:</b>	EEE
Answer Any FIVE FULL Questions									
							Marks	OBE	
								CO	RBT
1	Explain different sources of reactive power generation and absorption of reactive power in a power system.						[10]	CO3	L2
2	Explain with suitable block diagram, the mathematical modeling of AVR.						[10]	CO2	L2
3(a)	Write notes on basic generator control loops, and cross coupling between loops.						[05]	CO2	L2
(b)	Determine the primary ALFC loop parameters for control area having the following data. Total rated area capacity $P_r = 2000$ MW Inertia Constant $H = 5.0$ s Frequency $f_0 = 60$ Hz Normal operating load = 1000 MW						[05]	CO2	L3
4(a)	Derive the equations to get the relation between voltage, power and reactive power at a node.						[05]	CO3	L2
(b)	Explain the three modes of failures of a system.						[05]	CO6	L3
5	Explain how mathematical model of speed governor system is developed for Automatic Generation Control (Automatic Load Frequency Control).						[10]	CO2	L2
6	Briefly explain the two state generator model. With usual notations derive the expression for availability and unavailability in terms of failure and repair rate.						[10]	CO6	L2
7	Show that the real power flow between two nodes is determined by the transmission angle $\delta$ and the reactive power flow is determined by the scalar voltage difference between two nodes.						[10]	CO3	L2
8	Obtain the expressions for steady-state reliability and general reliability expression.						[10]	CO6	L2

\*\*\*\*\*All the Best\*\*\*\*\*