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Internal Assessment Test - II

Sub:	POWER SYSTEM OPERATION AND CONTROL						Code:	15EE81		
Date:	16/ 04/ 2019	Duration:	90 mins	Max Marks:	50	Sem:	8th	Branch:	EEE	
Answer Any FIVE FULL Questions										
								Marks	OBE	
									CO	RBT
1	With a block diagram representation, explain tie-line bias control of a two area load frequency control.						[10]	CO4	L2	
2	Explain with block diagram modelling of Generator and Load.						[10]	CO4	L2	
3(a)	Explain basic generator control loops and cross-coupling between control loops.						[07]	CO3	L2	
(b)	Mention functions of AGC.						[03]	CO3	L2	
4(a)	Two machines operate in parallel to supply a load of 400 MW, the capacities of the machines are 200 MW and 500 MW. Each has a droop characteristic of 4%. Their governors are adjusted so that frequency is 100% on Full Load. Calculate the load supplied by each unit and the frequency at this load. The system frequency is 50 Hz.						[06]	CO4	L3	
(b)	Determine primary ALFC loop parameters for control area having the following data. Total rated capacity, $P_r = 2000$ MW; Inertia Constant, $H = 5.0$ S; Frequency $f_0 = 50$ Hz, Normal Operating Load, $P_D = 1000$ MW.						[04]	CO4	L3	
5	A single area consists of two generators as follows: $G_1 = 200$ MW, $R = 4\%$ (on machine base) $G_2 = 400$ MW, $R = 5\%$ (on machine base) They are connected in parallel and share a load of 600 MW in proportion to their rating, at 50 Hz. 200 MW of load is tripped. What is the generation to meet the new load if $D=0$. What is the frequency at new load? Repeat for $D = 1.5$ pu.						[10]	CO4	L3	
6	Obtain an expression for steady state change in system frequency Δf_{ss} for a step change in the load demand. Assume free governor operation.						[10]	CO4	L2	