GUJARAT TECHNOLOGICAL UNIVERSITY				
ME - SEMESTER- I (New course)• REMEDIAL EXAMINATION – SUMMER 2015				
Su	bject	Code: 2710711 Date:13/05/20	15	
Sul	oject N	Jame: Computer Methods in Power System Analysis		
Time: 10:30 am to 1:00 pm Tot			al Marks: 70	
Inst	truction			
	1.	Attempt all questions. Make suitable assumptions wherever necessary		
	2. 3.	Figures to the right indicate full marks.		
Q.1	(a)	Derive the equation for Y_{BUS} in terms of the incidence matrix $A = A = A$ and primitive admittance matrix $A = A = A$.	07	
	(b)	Describe the algorithm for NR method of power flow analysis.	07	
Q.2	(a)	Define and explain Fundamental Loop Matrix with example.	07	
	(b)	Compare and contrast the Decoupled Load Flow (DLF) and Fast Decoupled Load Flow (FDLF) methods of power flow analysis.	07	
	(b)	OR Prepare a flowchart for GS method of power flow analysis.	07	
0.2	(~) (a)	Driefly describe the linear constitution for the	07	
Q.3	(a) (b)	Describe the algorithm for short circuit analysis using bus impedance matrix. OR	07 07	
Q.3	(a)	Explain concentric relaxation technique with suitable example.	07	
	(b)	Briefly describe the importance of contingency selection. Explain any one method of contingency selection.	07	
Q.4	(a) (b)	Explain the procedure for bad data detection in relation to state estimation. Prepare a flowchart for least square state estimation.	07 07	
0.4		OR With a short water of short	07	
Q.4	(a) (b)	Explain continuation power flow and its application in power system analysis.	07 07	
Q.5	(a) (b)	Explain the Backward Euler method with suitable example. Briefly describe the Guassian elimination technique for solution of linear algebraic equations.	07 07	
o -		OR	~ -	
Q.5	(a)	Write the state space equation for a linear time invariant system. Describe the procedure to apply trapezoidal method of numerical integration to this system.	07	
	(b)	Consider a state space equation for a second order linear time invariant system of your choice. Show two iterations of Forward Euler method for this system.	07	
