Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – I • EXAMINATION – WINTER • 2013

Subject code: 710707N **Date: 06-01-2014**

Subject Name: Modern Power System Protection

Time: 10.30 am – 01.00 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 LINKNET? Discuss LINKNET structure using one example.	**07**
	(b)	With the help of block diagram, explain the various components of hardware of a digital relay.	**07**
Q.2	**(a)**	What is relay coordination? Describe the generalized flow-chart for relay coordination.	**07**
	(b)	Discuss the Aliasing Effect in Numerical relay and how to overcome the Aliasing effect with diagram.	**07**
		OR	
	(b)	Explain the Sampling theorem with the necessary condition.	**07**
Q.3	**(a)**	What is rate of frequency decline? What is Load-Shedding? Explain importance of Load-Shedding for power system.	**07**
	(b)	What is plug setting? Explain Flow-chart for plug setting determination.	**07**
		OR	
Q.3	**(a)**	Explain in brief the working of digital frequency relays. What is the effect of location of frequency relays?	**07**
	(b)	Explain Full cycle window algorithm with schematic diagram.	**07**
Q.4	**(a)**	What is reclosing? Explain factors governing application of reclosing.	**07**
	(b)	Explain the working of Induction Cylinder type frequency relay. Draw its characteristic for a typical operational delay of 6 cycles.	**07**
		OR	
Q.4	**(a)**	Discuss basic working principle of relay based on Travelling wave. Also explain same for internal and external fault.	**07**
	(b)	Why does distance relay overreaches and under reaches in case of the protection of series compensated transmission lines?	**07**
Q.5	**(a)**	Explain breaker-control scheme for single-shot reclosing relays.	**07**
	(b)	Discuss the main aspects of automatic synchronizing.	**07**
		OR	
Q.5	**(a)**	Describe multishot reclosing relays.	**07**
	(b)	Discuss load-shedding with special considerations for industrial system.	**07**

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