Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. Sem- I Examination January 2010

Subject code: 710707 **Subject Name: Modern Power System Protection**

Date: 27 / 01 / 2010 **Time: 12.00 – 2.30 pm**

Total Marks: 60

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Show basic components of digital relay with suitable diagram. Also explain components of Signal conditioning subsystem.	**08**
	(b)	State and explain Sampling theorem.	**04**
Q.2	**(a)**	What is LINKNET? Explain generalized flow-chart for relay co-ordination.	**06**
	(b)	Draw flow-chart for primary / backup relay pair.	**06**
		OR	
	(b)	Draw flow-charts to determine plug setting.	**06**
Q.3	**(a)**	Explain considerations for reclosing system	**08**
	(b)	Explain factors governing the application of reclosing.	**04**
		OR	
Q.3	**(a)**	Explain considerations for application of instantaneous reclosing	**06**
	(b)	Explain breaker-control scheme for single-shot reclosing relays.	**06**
Q.4	**(a)**	Explain frequency response during overload.	**06**
	(b)	Explain Load-Shedding scheme for loss of external source.	**06**
		OR	
Q.4	**(a)**	Explain different criteria and procedure is considered while designing Load-Shedding scheme.	**08**
	(b)	Write technical note on Induction-Cylinder Under Frequency relays.	**04**
Q.5	**(a)**	Explain basic working principle of relays based on Travelling Waves. Also explain Travelling Waves for Internal and External faults.	**08**
	(b)	State and explain reasons for favoring series compensation of long EHV transmission lines.	**04**
		OR	
Q.5	**(a)**	Explain Full cycle window algorithm with schematic diagram.	**06**
	(b)	Explain working principle of Least-Squares based method. Also explain Integral LSQ fit.	**06**

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