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Date: 08/05/2015

Seat No.:	
No.	

Subject Code:X70901

GUJARAT TECHNOLOGICAL UNIVERSITY PDDC - SEMESTER- VII • EXAMINATION - SUMMER 2015

Ti	me:0 struction 1	. Attempt all questions Make suitable assumptions wherever necessary.	70
Q.1	(a) (b)	Explain the basic requirements of protective system. Why is back up protection required? Discuss different types of back-up protections used.	07 07
Q.2	(a)	Define the following terms. (i) Over reach (ii) Under reach (iii) Fault clearing time (iv) CT ratio error (v) CT phase angle error (vi)Unit protection (vii) Plug setting multiplier	07
	(b)	Explain the working of carrier aided under reach transfer tripping scheme using time-distance characteristic and control circuit. OR	07
	(b)	Explain in detail the time-distance characteristics of three impedance relaying units used for the I, II and III zone of protection.	07
Q.3	(a)	Explain the faults in transformer. Explain the construction and working principle of Buchholz relay.	07
	(b)	Explain the negative phase sequence and field failure protection of Generator.	07
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Q.3	(a) (b)	Explain the protection of large induction motor. Explain the method of protecting bus bars using differential relaying. What are the limitations of this method and to what extent can these be overcome.	07 07
Q.4	(a)	Draw the block diagram of a numerical relay and explain the working of each block.	07
	(b)	What is the difference between an earth fault relay and an over current relay? Discuss various methods to energize an earth fault relay. OR	07
Q.4	(a) (b)	Explain over fluxing protection of transformer. Give the comparison between FIR and IIR filter.	07 07
Q.5	(a)	Discuss the working principle of an induction relay and also derive an expression for the torque produced by it.	07
	(b)	Explain the installation and commissioning test of relays in brief.	07
		OR	
Q.5	(a)	Discuss a protective scheme for the protection of parallel feeders and ring main system.	07
	(b)	Which special tests are carried out on a relay? Explain any two of them.	07
