Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. - SEMESTER – IV • EXAMINATION – WINTER 2012

Subject code: 140902 **Date: 28/12/2012**

Subject Name: Electrical Power

Time: 02.30 pm - 05.00 pm **Total Marks: 70**

Instructions:

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

Q.1	**(a)**	Discuss factors for site selection of Thermal power station	**07**
	(b)	Draw neat schematic diagram of hydro power station and label each component.	**07**
Q.2	**(a)**	Discuss advantages and disadvantages of Nuclear power stations	**07**
	(b)	Draw and explain combined cycle power plant	**07**
		OR	
	(b)	Discuss fully binary cycle solar thermal power plant	**07**
Q.3	**(a)**	Discuss wind turbine unit with battery storage facilities.	**07**
	(b)	Draw and explain generalized cable construction and explain them detail.	**07**
		OR	
Q.3	**(a)**	Compare overhead transmission line v/s underground transmission line.	**07**
	(b)	Enlist types of insulator and explain any two with neat sketch	**07**
Q.4	**(a)**	Discuss methods of improving power factor	**07**
	(b)	Enlist equipments or components in substation explain the function of each in brief	**07**
		OR	
Q.4	**(a)**	Explain self GMD and mutual GMD	**07**
Q.4	**(b)**	In a three phase line the three conductors are placed at the corners of a triangle of sides 1.5 m, 3m, and 2.6 m respectively. If the diameter of each conductor is 1.4 cm and the conductors are regularly transposed, calculate the inductance/phase/km length of the line.	**07**
Q.5	**(a)**	Give brief note on transposition of conductor	**07**
	(b)	Enumerate types of neutral earthing and explain any one with neat sketch	**07**
		OR	
Q.5	**(a)**	Discuss types of distributors in dc distribution	**07**
	(b)	Derive from basic consideration expression for capacitance and charging current per km length of a single phase line made of two solid round conductors of radius r metre and spaced at D metres. Neglet ground capacitance	**07**

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