Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER–VI • EXAMINATION – SUMMER • 2015

Subject Code: X60904 **Date:18/05/2015**

Subject Name: Power System Practice and Design

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)**	A transmission conductor having a diameter of 20 mm , weights 850 grams/meter. The span is 270 meters. The wind pressure is 38 kg/sq. m of projected area with ice coating of 13 mm. The ultimate strength of the conductor is 8000 kg. Calculate the maximum sag if the factor of safety is 2 and ice weights 910 kg/ meter cube.	**07**
	(b)	Write detailed technical note on corona and bundled conductors.	**07**
Q.2	**(a)**	What is string efficiency? How it can be improved.	**07**
	(b)	Discuss merits of HVDC system in detail.	**07**
		OR	
	(b)	Discuss demerits of HVDC system in detail.	**07**
Q.3	**(a)**	Explain in detail the significance of skin effect in detail.	**07**
	(b)	Prepare a layout of a typical 400 kV substation.	**07**
		OR	
Q.3	**(a)**	Discuss method of reducing tower footing resistance.	**07**
	(b)	Write short note on Insulation coordination.	**07**
Q.4	**(a)**	Derive equation to calculate sag in a transmission line with support at equal level.	**07**
	(b)	Write technical note on “Sag template”.	**07**
		OR	
Q.4	**(a)**	Derive equation to calculate sag in a transmission line with support at unequal level.	**07**
	(b)	Explain construction of different types of cables.	**07**
Q.5	**(a)**	Write note on Rural electrification scheme.	**07**
	(b)	Compare the design approach of short and medium transmission line.	**07**
		OR	
Q.5	**(a)**	Write note on lamp flicker.	**07**
	(b)	Compare various types of distribution systems.	**07**

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