Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC SEMESTER VI– EXAMINATION – SUMMER 2017

Subject Code: X60904 **Date: 06/05/2017**

Subject Name: Power System Practice and Design

Time: 10.30AM to 01.00PM **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)**	Discuss Kelvin's law to find the most economical conductor size. What are the limitations of this law?	**07**
	(b)	Write the list of equipments which are used in substation. Also write the importance of each equipment.	**07**
Q.2	**(a)**	What is string efficiency? How it can be improved?	**07**
	(b)	What is Ferranti effect? When and how it become significant? Explain methods to reduce it.	**07**
		OR	
	(b)	Write a short note on Gas Insulated Substation (GIS).	**07**
Q.3	**(a)**	Explain the advantages and disadvantages of HVDC system.	**07**
	(b)	What are corona losses? Discuss its significance and permissible limit. Write the advantages and disadvantages of corona losses.	**07**
		OR	
Q.3	**(a)**	Explain the various types of distribution systems.	**07**
	(b)	Explain insulation co-ordination with curves.	**07**
Q.4	**(a)**	Explain measurement of earth resistance.	**07**
	(b)	Define surge impedance loading. Explain the significant of it in transmission line design.	**07**
		OR	
Q.4	**(a)**	Discuss methods of reducing tower footing resistance.	**07**
	(b)	Compare the design approach of short and medium transmission line.	**07**
Q.5	**(a)**	Write note on lamp flicker.	**07**
	(b)	Derive equation to calculate sag in a transmission line with support at equal level.	**07**
		OR	
Q.5	**(a)**	What is skin effect? Explain in detail the significance of skin effect.	**07**
	(b)	Prepare a layout of a typical 400 KV substation.	**07**

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