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GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII (NEW) - EXAMINATION – SUMMER 2018

Subject Code: 2180903 **Date: 04/05/2018**

Subject Name: Power System Planning and Design

Time: 10:30 AM to 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.**

			MARKS
Q.1	**(a)**	Discuss touch potential	**03**
	(b)	Write a note on Corona.	**04**
	(c)	What is lamp flicker? Discuss its classification. What are the remedies for reducing lamp flicker.	**07**
Q.2	**(a)**	Explain BIL.	**03**
	(b)	Why transmission should be carried out at high voltages?	**04**
	(c)	Explain working principle and location of Lightning Arrester.	**07**
		OR	
	(c)	State and explain Kelvin's law for the most economical cross section of conductor.	**07**
Q.3	**(a)**	Explain step potential.	**03**
	(b)	What is interconnection? Write a short note.	**04**
	(c)	Write a note on selection of size and location for power plants.	**07**
		OR	
Q.3	**(a)**	Explain SIL.	**03**
	(b)	Discuss protective margin.	**04**
	(c)	Discuss the power system improvement scheme in detail.	**07**
Q.4	**(a)**	How the size of distributors is calculated?	**03**
	(b)	How generation planning is carried out?	**04**
	(c)	Discuss classification of distribution systems with neat diagrams. What are the advantages and disadvantages of each?	**07**

OR

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Q.4	**(a)**	Explain load forecasting.	**03**
	(b)	Discuss various voltage ratings to be taken into account while selecting the lightning arrestors.	**04**
	(c)	Explain the design of earthing grid.	**07**
Q.5	**(a)**	Explain radio and television interference.	**03**
	(b)	What is earth resistance? Explain voltmeter – ammeter method to measure it.	**04**
	(c)	Discuss various considerations in the size and location of substations.	**07**

OR

Q.5	**(a)**	What are sag templates?	**03**
	(b)	What is insulation coordination?	**04**
	(c)	Explain the methods of designing primary distribution system with reference to (1) Choice of voltage (2) Conductor size (3) Type of distribution system (4) Voltage drop.	**07**

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