

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VIII (NEW) EXAMINATION – WINTER 2017****Subject Code: 2180903****Date: 02/11/2017****Subject Name: Power System Planning and Design****Time: 02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

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

		<b>MARKS</b>
<b>Q.1</b>	(a) What is step potential?	<b>03</b>
	(b) Discuss touch potential.	<b>04</b>
	(c) Explain the design of earthing grid.	<b>07</b>
<b>Q.2</b>	(a) What is BIL? Discuss in detail.	<b>03</b>
	(b) What are the financial aspects of the power system improvement scheme?	<b>04</b>
	(c) Write a note on procedure to carry out insulation co-ordination.	<b>07</b>
	<b>OR</b>	
	(c) Explain the primary distribution design.	<b>07</b>
<b>Q.3</b>	(a) How the size of distributors is calculated?	<b>03</b>
	(b) Explain SIL.	<b>04</b>
	(c) What is lamp flicker? Discuss its types and remedies for the lamp flicker.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Discuss various voltage ratings to be taken into account while selecting the lightning arrestors.	<b>03</b>
	(b) Discuss protective margin.	<b>04</b>
	(c) How the electrical design of the transmission lines is carried out? Discuss in detail.	<b>07</b>
<b>Q.4</b>	(a) What are sag templates?	<b>03</b>
	(b) Why transmission should be carried out at high voltages?	<b>04</b>
	(c) Derive the sag-tension relation in a T-line.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) How generation planning is carried out?	<b>03</b>
	(b) Discuss distribution system planning.	<b>04</b>
	(c) Explain radio and television interference.	<b>07</b>
<b>Q.5</b>	(a) How the size of the generation station is determined?	<b>03</b>
	(b) Write a note on selection of location for power plants.	<b>04</b>
	(c) Discuss the power system improvement scheme in detail.	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) What is interconnection? Write a short note.	<b>03</b>
	(b) Write a note on Corona.	<b>04</b>
	(c) Discuss the transmission and distribution planning in detail.	<b>07</b>

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