

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VIII (OLD) EXAMINATION – WINTER 2020

Subject Code:180903

Date:21/01/2021

Subject Name:Power System Practice And Design

Time:02:00 PM TO 04:00 PM

Total Marks: 56

Instructions:

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

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| Q-1 | (a) | Explain classification of lamp-flicker and remedies for reducing lamp-flicker. | 07 |
| | (b) | Explain applications of HVDC system | 07 |
| Q-2 | (a) | Explain the role of Kelvin's law for the selection and size of feeders. | 07 |
| | (b) | Define critical disruptive voltage and visual critical voltage. How Corona los can be determined? What is significance of Corona in the design of transmission line? | 07 |
| Q-3 | (a) | Compare radial, ring and grid distribution system. State their applications | 07 |
| | (b) | Explain the methods of designing primary distribution system with reference to | 07 |
| | | (1) Choice of voltage | |
| | | (2) Conductor size | |
| | | (3) type of distribution system | |
| (4) Voltage drops. | | | |
| Q-4 | (a) | Explain main considerations in mechanical design of transmission line | 07 |
| | (b) | Explain the design considerations for EHV transmission lines. | 07 |
| Q-5 | (a) | Draw substation layout. Explain each component of layout. | 07 |
| | (b) | Write a note on insulation co-ordination and basic insulation levels adopted for EHV lines and equipment. | 07 |
| Q-6 | (a) | Explain touch potential and step potential. How to measure soil resistivity? | 07 |
| | (b) | Explain Radio and Television interference. | 07 |
| Q-7 | (a) | Explain factors to be considered for selection of size and location of generating station. | 07 |
| | (b) | What are the steps to be followed in the design of an earthing grid? | 07 |
| Q-8 | (a) | Draw and explain single line diagram showing main connections of HVDC transmission. | 07 |
| | (b) | Write a brief note on Gas Insulated Substation. | 07 |
