

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER–VIII (OLD) EXAMINATION – SUMMER 2019****Subject Code: 180801****Date: 13/05/2019****Subject Name: Testing And Installation Of Electrical Equipments And Systems****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.

- Q.1** (a) Explain the procedure and significance of temperature rise test with necessary figure and its co-relation with rated normal current. **07**
- (b) Write any seven causes of disturbance in power quality examine their effect on power quality and write remedies for each disturbance of electric power supply. **07**
- Q.2** (a) State the checks to be carried out at site prior to commissioning of electric motors. **07**
- (b) Describe the principle of fiber optic data transmission with necessary figure. **07**
- OR**
- (b) Define briefly the following terms in power cable: **07**
- a) Operating capacitance b) charging currents c) reactive power d) leakage currents e) continuous current carrying capacity f) inductance g) effective d.c. resistance.
- Q.3** (a) What are the causes of failure of a circuit-breaker? Explain the procedure of failure analysis. **07**
- (b) Explain the working principle of Megger with necessary figure and Procedure of its use. **07**
- OR**
- Q.3** (a) What is load shedding? Why is it necessary? How is it carried out and where? **07**
- (b) Explain the procedure of drying out of electric motor using the (1) radiating lamp (2) drying chambers and resistor heaters. **07**
- Q.4** (a) Describe the purpose, test set-up and procedure of power frequency withstand test on power transformer. **07**
- (b) State and explain the types of constructions of voltage transformers and their applications. **07**
- OR**
- Q.4** (a) Illustrate the schematic of bipolar 2-terminal HVDC link and define functioning of all parts of it. **07**
- (b) Give summary of auxiliary systems in substations and state their functions. **07**
- Q.5** (a) Describe the second characteristic numeral in the standard designation of cooling system. **07**
- (b) Prepare the sequence of tripping the main circuit-breaker, unit auxiliary circuit-breaker and field circuit breaker in the generating unit scheme. **07**
- OR**
- Q.5** (a) Explain the seven principles of safety management in electrical plants. **07**
- (b) Describe the test set-up and test procedure of switching impulse test with necessary figure. **07**

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