

GUJARAT TECHNOLOGICAL UNIVERSITY**BE SEM-VIII Examination May 2012****Subject code: 180801****Subject Name: Testing and Installation of Electrical Equipments and Systems****Date: 10/05/2012****Time: 10.30 am – 01.00 pm****Instructions:**

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

- Q.1** (a) Explain the seven principles of safety management in electrical plants. **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) Explain the procedure and significance of temperature rise test with necessary figure and its co-relation with rated normal current. **07**
(b) Describe the test set-up and test procedure of switching impulse test with necessary figure. **07**

OR

- (b) What are the causes of failure of a circuit-breaker? Explain the procedure of failure analysis. **07**

- Q.3** (a) Describe the second characteristic numeral in the standard designation of cooling system. **07**
(b) Explain the procedure of drying synchronous machine by circulating short-circuit currents with necessary figure. **05**
(c) List the various steps in installation of a large induction motor received in dismantled condition. **02**

OR

- Q.3** (a) What are the causes of temperature rise than the permissible limits in electric machine? What are remedies of these causes? **02**
(b) State the checks to be carried out at site prior to commissioning of electric motors. **05**
(c) Explain the principle of brushless excitation system with necessary block diagram and figure. **07**

- Q.4** (a) Prepare the sequence of tripping the main circuit-breaker, unit auxiliary circuit-breaker and field circuit breaker in the generating unit scheme. **07**
(b) Explain Ward-Leonard speed control of d.c. motors with figure. Where is it used? **07**

OR

- Q.4** (a) Illustrate the schematic of bipolar 2-terminal HVDC link and define functioning of all parts of its. **07**
(b) Give summary of auxiliary systems in substations and state their functions. **07**

- Q.5** (a) 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.

- (b)** Describe the principle of fiber optic data transmission with necessary figure. **07**

OR

- Q.5 (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**
