

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III (Old) EXAMINATION – WINTER 2019****Subject Code: 131901****Date: 10/12/2019****Subject Name: Electrical Machines And Electronics****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.

- Q.1** (a) Explain the working of two wire DC Generator. **07**
(b) Classify and Explain DC Generator with circuit diagram with terminal voltage and generated power equation. **07**
- Q.2** (a) Classify and Explain any one speed control methods for DC Shunt motor. **07**
(b) Sketch and explain the speed-current, speed-torque and torque-current characteristics of a DC Shunt motor. **07**
- OR**
- (b) Draw and explain the construction of a DC Machine. **07**
- Q.3** (a) Explain the core type and shell type single phase transformer and their working principle. **07**
(b) Explain the use of Bushing, Oil conservators and Breather in transformer. **07**
- OR**
- Q.3** (a) Explain double field revolving theory for the single phase induction motor. **07**
(b) Explain production of rotating magnetic field in the stator of three phase induction motor. **07**
- Q.4** (a) What is power factor? Discuss the disadvantages of low power factor and explain the methods to improve power factor. **07**
(b) What do you mean by Tariff? Explain different types of Tariff. **07**
- OR**
- Q.4** (a) Write advantages of high transmission voltage. **07**
(b) Explain parallel operation of alternators. **07**
- Q.5** (a) What is the purpose of substations in electrical power system? Explain briefly the function of various equipment use in a substation. **07**
(b) What is Logic-Gate? Draw the Truth table & symbol for NOT, AND, NAND, OR, NOR Gate. **07**
- OR**
- Q.5** (a) Explain three phase bridge rectifier in detail with the help of circuit diagram and waveforms **07**
(b) Draw & Explain Internal architecture of 8085 microprocessor **07**
