

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (NEW) - EXAMINATION – SUMMER 2018

Subject Code: 2160911

Date: 08/05/2018

Subject Name: Computer Aided Analysis and Design for Electrical Engg.

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 significance of “Kg/KVA” **03**
(b) State output data to be printed after execution of program. **04**
(c) Describe standard ratings of electrical machines and ventilation scheme in static machine. **07**
- Q.2** (a) State disadvantages of Higher Specific Electric Loadings. **03**
(b) Explain skin and proximity effect in conductors. **04**
(c) Draw flowchart for computer-aided design of field regulator. **07**
- OR**
- (c) Write a computer program for field winding design of DC generator. **07**
- Q.3** (a) Define the following terms used in armature winding design: (i) Back pitch (ii) Front pitch (iii) Winding pitch **03**
(b) Explain global coefficient matrix and elemental coefficient matrix. **04**
(c) Draw flowchart for computer-aided optimal design of transformer. **07**
- OR**
- Q.3** (a) Write output power equation of (i) DC machine and (ii) three phase transformer. **03**
(b) Explain the use of dummy coils and equalizer connections in d.c. armature windings. **04**
(c) Draw flowchart for design of starter for DC motor. **07**
- Q.4** (a) State the advantages of Finite Element Method. **03**
(b) Explain how to estimate no-load current of three phase transformer. **04**
(c) Write a computer program for window dimensions of 3- phase transformer. **07**
- OR**
- Q.4** (a) Discuss the electrical properties of insulating materials. **03**
(b) Explain advantages of computer-aided design. **04**
(c) Draw flowchart for computer-aided armature winding design of DC Motor. **07**
- Q.5** (a) Explain various modes of heat dissipation. **03**
(b) Explain shape function. **04**
(c) Explain various applications of FEM technique for design. **07**
- OR**
- Q.5** (a) State two factors which govern the choice of numbers of poles in a d.c. machine. **03**
(b) Which are the types of enclosures for rotating machine? **04**
(c) Draw flowchart for computer-aided design of choke coil. **07**
