

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (NEW) EXAMINATION – WINTER 2017

Subject Code: 2160911

Date: 20/11/2017

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

Time: 02:30 PM TO 05:00PM

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 standard ratings of electrical machines. **03**
(b) List properties of good insulating materials **04**
(c) State input data to be fed in to the program. **07**
- Q.2** (a) State objective parameters for optimization in Electrical machine. **03**
(b) State disadvantages of Higher Specific Magnetic Loadings. **04**
(c) Draw flowchart for computer-aided optimal design of DC machine. **07**
- OR**
- (c) Write a computer program for design of DC Shunt motor starter. **07**
- Q.3** (a) State advantages of Higher Specific Magnetic Loadings. **03**
(b) Explain cooling in Transformer. **04**
(c) Explain heating and heat dissipation in Electrical machine. **07**
- OR**
- Q.3** (a) State types of Insulating materials. **03**
(b) What are the advantages of Finite Element Method? **04**
(c) Write a computer program for main dimensions of DC Generator. **07**
- Q.4** (a) Write steps for general design procedure. **07**
(b) Draw flowchart for computer-aided design of field regulator. **07**
- OR**
- Q.4** (a) What are the different applications of FEM in engineering field? **07**
(b) Write a computer program for computer-aided design of choke coil. **07**
- Q.5** (a) Draw flowchart for design windings of transformer. **07**
(b) Write a computer program for computer-aided armature winding design of DC Motor. **07**
- OR**
- Q.5** (a) Write a computer program for window dimensions of 3- phase transformer. **07**
(b) Write a flowchart for design of cooling tubes in transformer. **07**
