

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI(NEW) – EXAMINATION – SUMMER 2019

Subject Code:2160911

Date:21/05/2019

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.

		MARKS
Q.1	(a) State Output data to be printed after execution of program.	03
	(b) Explain heating and cooling in electrical machines and modes of heat dissipation.	04
	(c) Explain advantages and disadvantages of Higher Specific Electric and Magnetic Loadings.	07
Q.2	(a) Explain lowest cost and significance of "Kg/KVA".	03
	(b) Explain various objective parameters for optimization in an electrical machine and selection of optimal design.	04
	(c) Draw Flowchart for computer-aided optimal design of Transformer.	07
	OR	
	(c) Draw Flowchart for computer-aided optimal design of DC machine.	07
Q.3	(a) Explain output coefficient, specific magnetic loading and specific electric loading.	03
	(b) Explain types of enclosures for rotating machine.	04
	(c) Explain general design procedure and steps to get optimal design.	07
	OR	
Q.3	(a) Explain quantity of cooling medium.	03
	(b) Explain FEM technique and elemental coefficient matrix.	04
	(c) Write a computer program for window dimensions of 3- phase transformer.	07
Q.4	(a) Explain Global coefficient matrix, skin and proximity effect in conductors.	03
	(b) Write a computer program for design of DC Shunt motor starter.	04
	(c) Explain design procedure of single phase small transformer.	07
	OR	
Q.4	(a) Write Sequential Steps for Design of Each Part of DC machine.	03
	(b) Draw flowchart for computer design of main dimensions of DC generator.	04
	(c) Write a program for field winding design of DC generator.	07
Q.5	(a) Write Sequential Steps for Design of Each Part of transformer.	03
	(b) Draw a flowchart for design of cooling tubes in transformer.	04
	(c) Write a program for amp-turns and no load current of a 3 phase core type power transformer.	07

OR

- Q.5**
- (a)** Which are the modifications to be done to get Optimal design of core type power transformer. **03**
 - (b)** Draw a flowchart for design of Commutator and brushes of DC machine. **04**
 - (c)** Write a program for design of Commutator and brushes of DC machine. **07**

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