

Roll No

EX-8001 (CBGS)

B.E. VIII Semester

Examination, May 2019

Choice Based Grading System (CBGS)
Computer-Aided Design Of Electrical Machine

Time : Three Hours

Maximum Marks : 70

- Note:* i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Describe the concept and standard form of linear programming and non linear programming techniques. 7
b) What is Optimization? How many types of optimization can be possible? What are the various constraints for optimizing a given problem. 7
2. a) Describe the design of armature for a DC machine. How the MMF distribution in DC machines can be calculated. 7
b) Explain the selection of variables for optimal design of DC Machine. 7
3. With the help of flow chart, explain the synthesis method of machine design problems. 14
4. a) Explain the procedure for design of winding of power transformer. 7
b) Explain, how to decide the objective function and constraint function for the optimal design of a power transformer. 7

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5. a) With the help of flow chart explain the steps for designing the main dimensions of an alternator. 7
b) What are the factors which decide the selection of variable for optimal design of 3 ϕ alternator? Explain. 7
6. a) With the help of flow chart explain the design of squirrel cage rotor of an induction motor. 7
b) Discuss the different factor which are taken in to account while designing of rotor for a 3 ϕ slipring induction motor. 7
7. Write short note on any two of the following 14
a) Mathematical programming method
b) Objective function and constraint function of 3 ϕ induction motor
c) Mathematical formulation of design equation of 3 ϕ alternator. <http://www.rgpvonline.com>
8. a) How computer could be useful in effective design of machines. 5
b) Explain the method of designing of power transformer for minimum losses and maximum efficiency. 5
c) What are the direct and quadrature axis reactances and how they can be determined. 4
