

Paper Id

120234

Roll No.

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B.TECH
(SEM VI) THEORY EXAMINATION 2018-19
CONVENTIONAL & CAD OF ELECTRICAL MACHINES

Time: 3 Hours

Total Marks: 100

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. **Attempt all questions in brief.** **2 x 10 = 20**
- a) What is the importance of specific loading?
 - b) What should be the properties of highly conducting material?
 - c) Explain winding pitch.
 - d) What do you mean by specific magnetic loading?
 - e) What is salient pole in synchronous motor?
 - f) Define standardization.
 - g) Calculate the efficiency of a transformer.
 - h) What are the advantages and limitations of CAD?
 - i) Explain the basic concept of designing.
 - j) Explain specific electrical loading.

SECTION B

2. **Attempt any three of the following:** **10 x 3 = 30**
- a) Derive the output equation for a 3-phase shell type transformer. State the assumption made. Explain why stepped core is used in transformers.
 - b) Explain the designing of armature of a 3 phase ac machine.
 - c) Design the field system of synchronous machine.
 - d) Write a program in C language for the designing of pole and calculation of AT for dc machine.
 - e) What are the modern trends in design and manufacturing techniques of machines?

SECTION C

3. **Attempt any one part of the following:** **10 x 1 = 10**
- (a) Explain general procedure of design and manufacturing of any product.
 - (b) Design the magnetic frame of transformer.
4. **Attempt any one part of the following:** **10 x 1 = 10**
- (a) Explain the factors affecting the size of rotating machines.
 - (b) Explain the designing of core and armature of dc machine.
5. **Attempt any one part of the following:** **10 x 1 = 10**
- (a) Design the stator winding of three phase induction motor.
 - (b) Explain the designing of shunt field and series field winding of dc motor.
6. **Attempt any one part of the following:** **10 x 1 = 10**
- (a) Draw the flow chart for the designing of synchronous machine
 - (b) Explain the concept of optimization in CAD and its procedure.
7. **Attempt any one part of the following:** **10 x 1 = 10**
- (a) Write a program in C language for the designing Armature Winding & Core of synchronous machine.
 - (b) Explain the designing of squirrel cage rotor of three phase induction motor.