

Form and Program of Personal Preparation Assessment Test

Master Course in Electrical Engineering

The personal preparation assessment test consists of a multiple-choice test comprising 30 questions. For each question the candidate must indicate only one solution among 3-to-5 possibilities. One and only one of the answers suggested is correct. The test is passed if at least 20 correct answers are given. The amount of time available for the test will be communicated by the Commission.

The subject areas of the questions are defined by the following list of topics.

Basic Engineering Knowledge

- Mathematical expressions used in engineering
- Physics
- Chemistry
- Informatics
- Electrical measurements

Electromagnetic Fields and Circuits

- Measurement units of electrical quantities
- Ohm's law for stationary dipoles and Kirchhoff's laws
- Theorem of superimposition of effects
- Theorem of the equivalent generator

Electrical Machines and Drives

- Equivalent circuit of power transformers
- Expression of the torque in different the different types of electrical machines
- Characteristics and equivalent circuits of asynchronous machines
- Characteristics and equivalent circuits of synchronous machines

Power Systems

- Voltage drops in industrial electrical grids
- Power factor correction of electric loads
- Symmetric and asymmetric short-circuit calculations
- Load-flow calculations

Energy Planning

- Technical physics
- Machines
- Electric energy management