

“GHEORGHE ASACHI” TECHNICAL UNIVERSITY OF IAȘI

Faculty of Electrical Engineering

Department of Electrical Engineering

Competition for position **no. 2, Professor**, in the Department's positions list

Disciplines: Electrical Circuit Theory I
Electrical Circuit Theory II

TOPICS OF COMPETITION

for the professor position

1. Dipole circuit elements: resistor, coil, capacitor, voltage generator, current generator connections of the same elements.
2. General theorems of electrical circuits: Kirchhoff's theorems, Joubert's theorem, superposition theorem, reciprocity theorem, power conservation theorem.
3. Elements of topological analysis of electrical circuits: topological graph, tree, loop, associated incidence matrices.
4. Linear resistive circuits: methods of analyzing linear resistive circuits: using Kirchhoff's and Joubert's theorems, loop currents method, nodal voltages method, dual circuits. Thevenin-Norton dipole.
5. Three-Phase Circuits in Steady-State Sinusoidal Operation: properties of three-phase systems, complex representation of three-phase systems, three-phase system connections, analysis of three-phase circuits supplied with symmetric voltages.
6. Long Electrical Transmission Lines: distributed parameter circuits, line parameters, equations of long electrical transmission lines, homogeneous two-wire long lines in steady-state sinusoidal operation, voltage and current waves in long lines under sinusoidal conditions, distortionless line, lossless line.
7. Transient Regime of Linear Electrical Circuits: general aspects, switching theorems, time-domain analysis methods for electrical circuits.

Bibliography:

1. Adrian A. Adăscăliței: Teoria circuitelor electrice, Editura Performantica 2015.
2. Georgel Paicu, Teoria circuitelor electrice, Editia a II-a II, Editura Pim, Iași, 2011.
3. Camelia Petrescu: Electrotehnică (curs), Editura Tehnopress, Iași, 2006.
4. Lucia Dumitriu, Mihai Iordache: Teoria modernă a circuitelor electrice, Editura All Educational. București, 1998.
5. H. Rosman, Gh. Savin, Circuite electrice liniare, Litografia Inst. Politehnic Iași, 1977.
6. C.I. Mocanu, Teoria circuitelor electrice, Ed. Didactică și Pedagogică, București, 1979.
7. A. Crețu și colectiv: Electrotehnică și mașini electrice, Rotaprint I.P. Iași, 1990.
8. A. Crețu, V. Dobrea, R. Cociu: Electrotehnică și mașini electrice, Ed. Cuant, Chișinău 1998.
9. V. R. Cociu, L. Cociu, Elemente de electrotehnică Editura PIM 2015.
10. V. R. Cociu, S. Aradoaei, Electrotehnică și electronică – îndrumar de laborator Editura PIM 2015.

Dean,

Prof.univ.dr.ing. Dorin-Dumitru Lucache

Head of Department,,

Prof.Dr.ing. Cristian Gyoza Haba