

ВВЕДЕНИЕ

CHAPTER 1. ELECTROSTATICS

Basic notions of electrostatics. Coulomb's law

Electrostatic field

Flux of EF intensity vector

Electrostatic field potential

Dielectrics (isolators), conductors, semiconductors

Dielectrics

Conductors

Semiconductors

Types of conductivity of semiconductors p-n junction in semiconductors

Transistor

Electric capacitance

Capacitors

Series and parallel capacitors

Questions to Chapter 1

Practical tasks

Exercises

CHAPTER 2. DIRECT CURRENT

Current, density

Direction and the speed of current

Outside forces. Potential difference, EMF, voltage

Ohm's law for a circuit part

Electrical resistance. Resistivity of the conductor

Temperature dependence of resistance

Connection of conductors

Electrical energy, operation and current power

The Joule — Lenz law

Kirchhoff's laws (rules)

Questions to Chapter 2

Practical tasks

Exercises

CHAPTER 3. MAGNETIC PHENOMENA

Magnetic field. Magnetic field induction

Ampere's law

The magnetic field of a moving charge. The Lorentz force

Magnetic flux. The phenomenon of electromagnetic induction

The principle of the function of electric current generators

Rotation of the frame in a magnetic field. DC electric motor

The speaker operation principle

Self-induction. Inductance

Mutual induction. Inductance

Transformers

Magnetic properties of the substance

Magnetic hysteresis

Questions to Chapter 3

Practical tasks

Exercises

CHAPTER 4. ELECTRICAL MEASURING INSTRUMENTS AND MEASUREMENTS

Basic terms and definitions

Electrical measuring devices are classified into different types.

Ammeters

Voltmeters

Ohmmeter. Multimeter. Electric meter

Electrical circuits and diagrams

Questions to Chapter 4

Exercises

CHAPTER 5. ENERGY SYSTEM

Power transmission lines

Thermal power plant

Hydroelectric power station

Nuclear power plants

Innovations in electric power generation

Questions to Chapter 5

Exercises

ENGLISH-RUSSIAN DICTIONARY ON ELECTRIC POWER ENGINEERING (АНГЛО-РУССКИЙ СЛОВАРЬ

ПО ЭЛЕКТРОЭНЕРГЕТИКЕ)

СПИСОК ЛИТЕРАТУРЫ