INTRODUCTION

The Canadian Engineering Qualifications Board of Engineers Canada issues the Examination Syllabus that includes a continually increasing number of engineering disciplines.

Each discipline examination syllabus is divided into two examination categories: compulsory and elective. A full set of Electrical Engineering examinations consists of nine, three-hour examination papers. Candidates will be assigned examinations based on an assessment of their academic background. Examinations from discipline syllabi other than those specific to the candidates’ discipline may be assigned at the discretion of the constituent association.

Before writing the discipline examinations, candidates must have passed, or have been exempted from, the Basic Studies Examinations.

Information on examination scheduling, textbooks, materials provided or required, and whether the examinations are open or closed book, will be supplied by the constituent association.

ELECTRICAL ENGINEERING EXAMINATIONS

GROUP A

COMPULSORY EXAMINATIONS (SEVEN REQUIRED)

16-Elec-A1 Circuits


16-Elec-A2 Systems and Control


16-Elec-A3 Signals and Communications

16-Elec-A4  Digital Systems and Computers

Combinational, sequential, and synchronous logic circuits. Register level design of digital systems. Computer arithmetic, central processing unit, memory systems and peripherals. Embedded and higher-level (e.g. C) programming, interrupts, and interfacing and communication. Computer architecture.

16-Elec-A5  Electronics

Semiconductor devices; diodes and thyristors. Bipolar and field effect transistors as linear devices and switches. Bias circuits, basic amplifiers, small-signal equivalent circuits, transfer functions, and frequency response. Operational amplifiers and comparators. Digital integrated circuits and logic families: CMOS.

16-Elec-A6  Power Systems and Machines

Magnetic circuits and transformers. Wye and delta connected three-phase systems. Generation, transmission, and distribution of electric power. Three-phase transformers. AC and DC machines. Three-phase synchronous machines and three phase induction motors.

16-Elec-A7  Electromagnetics

GROUP B

ELECTIVE EXAMINATIONS (TWO REQUIRED)

16-Elec-B1 Digital Signal Processing

Discrete-time signals and systems: system input-output and convolution, Z-transform and transfer functions. Discrete-time Fourier transform (DFT) and Fast Fourier transform (FFT). Design of finite impulse response (FIR) and infinite impulse response (IIR) filters. DSP implementation considerations.

16-Elec-B2 Advanced Control Systems


16-Elec-B3 Digital Communications Systems

A/D conversion, source coding; signal sets, line codes, modulation, optimal reception, demodulation, performance in noisy channels, error detecting and correcting codes. Radio communications; link analysis and performance, terrestrial and satellite communications.

16-Elec-B4 Information Technology Networks


16-Elec-B5 Advanced Electronics


16-Elec-B6 Integrated Circuit Engineering


16-Elec-B7 Power Systems Engineering

16-Elec-B8  Power Electronics and Drives


16-Elec-B9  Electromagnetic Field, Transmission Lines, Antennas, and Radiation


16-Elec-B10  Electro-Optical Engineering