

**Department of Electronics Engineering
Faculty of Engineering and Technology**

Aligarh Muslim University, Aligarh

**Syllabus for Ph.D. Admission Test, Under Visvesvaraya Ph.D Scheme for Electronics
and IT - Phase II 2024-2025 Onwards**

Section-B

Circuits, Signals and Systems:

Network Theorems; Circuit Analysis in Time and Frequency Domain; Linear Two-Port Network Parameters; Representation and Analysis of Continuous and Discrete Time Signals and Systems; Sampling; Analog and Digital Filters.

Electronic Devices:

Carrier Transport in Semiconductors; PN Junction and Its Applications; BJT and MOSFET: Operation and Device Model.

Analog and Digital Electronics:

Amplifiers: Biasing, Stability, Feedback, Single and Multistage; Op-amp; Applications of Op-amp; Filters, Oscillators, and Wave Shaping Circuits

Boolean algebra; Minimization of Functions; Combinational and Sequential Circuits; Logic Families; ADC and DACs; Semiconductor Memories; Microprocessors and Microcontrollers; CMOS Digital and Analog Design

Communication Systems and Signal Processing:

Modulation; Baseband and Passband Communication; Optimum Receivers and Probability of Error; Information Theory and Channel Coding; Communication Networks; Wave Propagation and Antennas; Microwave Devices and Components