



## RECRUITMENT CELL

NATIONAL INSTITUTE OF TECHNOLOGY TIRUCHIRAPPALLI – 620 015.

### Syllabus for Skill and Main tests for the post of Technician and Senior Technician

#### Group I - Circuit Branches

Basics of Circuit analysis - Node and mesh analysis, superposition, Thevenin's theorem, Norton's theorem, reciprocity. Sinusoidal steady state analysis: phasors, complex power, maximum power transfer. Time and frequency domain analysis of linear circuits: RL, RC and RLC circuits, solution of network equations using Laplace transform.

Basics of analog electronic devices - Characteristics of PN Junction diode, Zener diode, BJT, MOSFET, FET, LED, Photo diode and Solar cell

Basics of digital electronics, Number systems, Combinational logic circuits and Sequential logic circuits, Registers, Counters

Linear Integrated Circuits – Op-amps, summers, differentiators, integrators, active filters, Schmitt triggers and oscillators

Basics of Microprocessors and microcontrollers, Assembly language Programming, Basics of Programming in C and Data Structures, Basics of Databases, Operating Systems,

Computer Networks, UTM / Firewall, Passive & Active Network (Switching & Routing, Wireless, Transmission Media), Web Technologies & Internet Analog communications: amplitude modulation and demodulation, angle modulation and demodulation, Digital communications: PCM, DPCM, digital modulation schemes (ASK, PSK, FSK, QAM). Internal organization, SRAM, DRAM, SDRAM, Rambus Memory, ROM Technology, virtual memory, Instruction sequencing, Instruction execution, Hardwired control and microprogrammed control, micro instructions, Instruction pipelining.

Basics of Instrumentation and Control Systems, Appropriate usage of measuring instruments – MI, MC ammeter & volt meters and watt meter, energy meter, tacho- meter, digital multimeter, DSO, Analog and Digital IC Tester,