**COMMON Syllabus for the post of Instructor Gr.-II & Technician Gr.-III**
Notification Sl. No. 7& 8
Qualification- Diploma in Electronics & Communication

## Basics of Electrical and Electronics Engineering

- Electrostatics
- Electromagnetic Induction
- AC Circuits
- Electrical Machines
- Passive Components
- Introduction to Semiconductor Devices
- Bipolar Transistors
- Field Effect Transistor
- Special Semiconductor Devices
- Fabrication of Integrated ICs
- Opto-semiconductor Devices

## Analog Electronics & Digital Electronics

- DC regulated power supply
- BJT biasing and amplifiers
- OP-amp and applications
- Active filters and instrumentation amplifier
- Wave-shaping circuits
- Sinusoidal oscillators
- Number systems and codes
- Basic logic circuits
- Arithmetic circuits
- Combinational logic circuits
- Basic sequential circuits
- Registers and counters
- D to A and A to D Converters
- Memories and programmable devices
- Digital integrated circuits

## ANALOG COMMUNICATION

- Network Theorems
- Transmission lines
- Antennas and wave propagation
- Amplitude modulation and demodulation
- Frequency modulation and demodulation

### Electronic Measurements and Instrumentation
- Basics of measurements
- Transducers
- Analog meters
- Testing instruments
- Digital meters

### Microcontroller & Applications
- 8051 Architecture
- Embedded C
- Timers /Counters and Serial I/O
- Interfacing the 8051

### Digital Communication
- Digital communication techniques
- Digital modulation techniques
- Multiplexing techniques and multiple Access
- Error Detection and Correction
- Transmission Media

### Data Communication and Networking
- Introduction to data communication and networks
- Networking protocols and OSI model
- Computer Networks
- TCP/IP
- Communication protocols
- Internet devices and protocols

### ARM Controller
- ARM Embedded Systems and ARM Processor Fundamentals
- ARM Instruction Set
- Introduction to THUMB and ARM Programming
- Exception and Interrupt handling schemes
- LPC2148 ARM CPU
- Peripherals

### Advanced Communication
- Microwave Devices
- Radar Principles and Applications
- Satellite Fundamentals

- Satellite Communication System
- Satellite Applications
- Mobile and Wireless Communications
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### Industrial Automation

- Power Electronic Devices
- Switching of SCR
- Choppers, Inverters and Cycloconverters
- Applications of Thyristors
- Programmable Logic Controllers
- DCS and SCADA System

### Embedded Systems

- Introduction to Embedded System
- Architecture of Embedded System
- Introduction to MSP430 Architecture
- MSP430 Assembly and Embedded C Programming
- MSP430 GPIO, Timer and On-chip Peripherals
- MSP430: Mixed Signal Systems