



प्राविधिक शिक्षा तथा व्यावसायिक तालीम परिषद्
नेपाल बनेपा पोलिटेक्निक ईन्स्टिच्यूट
पदपूर्ति उप- समिति
बनेपा, काभ्रेको

इलेक्ट्रोनिक्स एण्ड कम्प्युनिकेशन प्रशिक्षक/कम्प्युटर प्रशिक्षक
(अधिकृत स्तर तृतीय श्रेणी प्राविधिक) पदको
मूल्यांकन योजना

प्रथम चरण: लिखित परीक्षा योजना

बिषय	खण्ड	प्रश्नहरूको किसिम	प्रश्न संख्या	अंक भार	समय	पूर्णांक	उत्तीर्णांक
सेवा सम्बन्धी प्राविधिक विषय	सेवा सम्बन्धी समूह/उपसमूहको प्राविधिक विषय	बस्तुगत बहुउत्तर प्रश्नहरू (Multiple Choice)	२५	२५X२=५०	३० मिनेट	१००	४०
		विषयगत छोटो उत्तर प्रश्नहरू	५	५X१०=५०	१ घण्टा १५ मिनेट		

द्वितीय चरण :: अन्तर्वार्ता योजना

बिषय	पूर्णांक	परीक्षा प्राणली
अन्तर्वार्ता	२५	मौखिक

सम्पर्क:

फोन नं:- ०११-६६४२९०

Email: nbpi.edu@gmail.com

Website: nbpi.ed.np

इलेक्ट्रॉनिक्स एण्ड कम्युनिकेशन प्रशिक्षक
(अधिकृत स्तर तृतीय श्रेणी प्राविधिक) पदको
लिखित परीक्षाको पाठ्यक्रम

सेवा सम्बन्धी प्राविधिक विषय

पूर्णाङ्क - १००

1. Introduction to Electrical Circuit and System

- 1.1. Potential difference, current, power, energy
- 1.2. Resistor, Inductor, Capacitor and their defining equations
- 1.3. Ohm's law, Kirchhoff's laws, superposition theorems
- 1.4. DC Circuit analysis: Thevenin's theorem, Norton's theorem
- 1.5. AC circuit definitions: Sinusoidal current and voltage, impedance, phase angle, frequency, period
- 1.6. AC circuit analysis: RL, RC and RLC circuits
- 1.7. Resonance circuit (series and parallel)
- 1.8. Basic concept of AC and DC generators and motors

2. Basic Electronics

- 2.1. Semiconductor theory: conduction of electrons and energy bands, semiconductor materials, characteristics and types, P-N junction, characteristics
- 2.2. The diode, special purpose diodes: Zener diode, Varactor diode, Optical diodes
 - 2.2.1 Half and full wave rectifier, power supply filters and regulators
 - 2.2.2 Voltage multipliers
- 2.3. Bipolar junction transistors: theory, operation, CB, CE and CC characteristics
- 2.4. Field - Effect Transistor (FET), Metal - Oxide FET, Operation and transfer characteristics
- 2.5. The silicon controlled rectifier (SCR), SCR application, Diac and Triac, SCR Switch
- 2.6. The Oscillator: principles, RC and LC oscillators, 555 timers as an oscillator
- 2.7. Voltage regulators: series and shunt, IC voltage regulator

3. Amplifiers and Applications

- 3.1. Power amplifiers: Class A, B and AB push pull amplifiers
- 3.2. Differential amplifiers
- 3.3. Operational amplifier, inverting and non-inverting, Ideal Op-amp, frequency response, slew rate
- 3.4. Application of OP-amp: adder and subtractor, integration and differentiation

4. Digital Electronics and Microprocessors

- 4.1. Binary, Octal, Hexadecimal number systems and their conversions and binary Arithmetic.
- 4.2. Logic gates, Boolean algebra, universal gates
- 4.3. SOP and POs equations, K-Map
- 4.4. Combinational logic: encoder, decoder, MUX, DEMUX, parity generator, half and full adder / subtractor
- 4.5. Sequential Logic, Flip flops, counters. Shift registers and application of registers and counters
- 4.6. Analog and digital conversion
- 4.7. Fundamental of microprocessor: Architecture, instruction fetch and execution cycle, basic concepts in interfacing RS 232, parallel port and PPI card
- 4.8. Assembly language programming: 8085 programming, data transfer and arithmetic/logical instructions, branching instructions, stack and I/O instructions.

5. Communication Systems

- 5.1. Amplitude modulation and demodulation, the mixer
- 5.2. IF and audio amplifiers
- 5.3. Frequency modulation, the phase locked loop
- 5.4. Digital communication system: sampling theorem, quantization
- 5.5. Pulse code modulation
- 5.6. Mobile networks: GSM, GPRS, CDMA, WCDMA, 3G and 4G networks
- 5.7. Computer networks: TCP IP protocols, internet, intranet, LAN, WAN.
(लोक सेवा आयोग र प्राविधिक शिक्षा तथा व्यावसायिक तालीम परिषद्को पाठ्यक्रममा आधारित)

॥ समाप्त ॥