

**द्वितीय पत्र (Paper II) : Technical Subject**

**Section (A)- 30 Marks**

1. **Transistor Equivalent Circuit Analysis and Design** **10%**  
General parameters, input resistance, output resistance, current gain, voltage gain and power gain, replacement of transistor with hybrid equivalent common base, common collector and common emitter configuration, Design of CE amplifier, stabilizing the DC Bias, AC design consideration, DC analysis and AC analysis Load Line, cut -off frequency
2. **Unipolar Transistor and Integrated circuits** **10%**  
Field effect transistor, typical input impedance, performance characteristic, Biasing methods, amplifiers and other applications, depletion type MOSFET, enhancement type MOSFET, Biasing the MOSFET, operating modes, common gate and common drain configuration, Dual gate - FET, integrated circuit concepts, SSI, MSI, LSI, VLSI integrated circuit commercial ICs, complex operation amplifier, typical integrated circuit Op-Amp, Op-Amp application, integrated gate arrays
3. **Power supplies** **10%**  
Single phase and Polyphase AC power supply systems, Electrical motors, AC/DC generators, Rectifiers and filters, Regulator power supply system, Uninterruptible Power Supply Systems

**Section (B)- 30 Marks**

4. **Communication Systems** **10%**  
HF and VHF propagation, characteristics, Transmission lines, antenna fundamentals, analog and digital modulation and demodulation techniques, terrestrial and satellite communication systems, Voice and data communication systems
5. **Audio / Video Systems** **20%**  
Micro phones, speakers, Acoustics, Audio/Video equipment, Audio/ Video Amplifier circuits, Public Address systems, Close Circuit Television , Audio / Video recording/ play back (Analog / Digital) System

**Section (C)- 20 Marks**

6. **Microprocessor Fundamental** **10%**  
Basic concept, circuit theory, construction, operation and applications of microprocessors, Microprocessor based instrumentation systems
7. **Digital Logic Circuit** **10%**  
Discrete component logic circuits, AND, OR, NOT, NAND, NOR, XOR gates, integrated logic circuits, number systems, logic theory, counters, memories, sequential and combinational circuits

**Section (D)- 20 Marks**

8. **Electronic Security System** **10%**  
Metal Detector, CCTV, X-rays, Recognition Devices (iris, thump, radio frequency identity), electronic card system, bar codes
9. **Management Concepts** **10%**  
authority and power delegation, motivation. Time management, conflict management, use of inventory, ITU overview, ICT policy, Telecommunication policy, Radio Act and Regulations, National Frequency Allocation Plan.

प्रथम चरणको लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरुलाई मात्र  
लिइने सामूहिक परीक्षण (Group Test) को लागि

### सामूहिक छलफल (Group Discussion)

यस प्रयोजनको लागि गरिने परीक्षण १० पूर्णाङ्क र ३० मिनेट अवधिको हुनेछ जुन नेताविहिन सामूहिक छलफल (Leaderless Group Discussion) को रूपमा अवलम्बन गरिने छ । दिइएको प्रश्न वा Topic का विषयमा पालैपालोसँग निर्दिष्ट समयभित्र समूहबीच छलफल गर्दै प्रत्येक उम्मेदवारले व्यक्तिगत प्रस्तुति (Individual Presentation) गर्नु पर्नेछ । यस परीक्षणमा मूल्याङ्कनको लागि देहाय अनुसारको ३ जना भन्दा बढीको समिति रहनेछ ।

आयोगका सदस्य	-	अध्यक्ष
आयोगका सदस्य	-	सदस्य
मनोविज्ञ	-	सदस्य
दक्ष/विज्ञ (१ जना)	-	सदस्य

### सामूहिक छलफलमा दिइने नमुना प्रश्न वा Topic

उदाहरणको लागि - उर्जा संकट, गरीबी निवारण, स्वास्थ्य बीमा, खाद्य सुरक्षा, प्रतिभा पलायन जस्ता Topics मध्ये कुनै एक Topic मात्र दिइनेछ ।