

द्वितीय पत्र (Paper II): Technical Subject

Section A- 30 Marks

1. Electronics Device, Circuit and Techniques

Use, operation and characteristics of Diode, triode, pentode, Transistors, thyristor; measurement of resistance, capacitance, inductance, current, voltage in different R-C-L circuit, different types of amplifiers and rectifiers' usage and characteristics, Strain gauge and application, SCR (simple, phase control, temperature control, light control), close/open loop control and choppers, Boolean algebra, Logical gates and switching algebra, Memory (statics, volatile), A/D & D/A converter circuits, Sampling theory

6. Power supplies

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

2. Information Technology

Computer, Microprocessor, Signal processing, Database Management, Computer Architects and computer Graphics, Internet, email and Web-pages, e-strategies (e-government, e-business, e-learning, e-health, e-employment, e-environment, e-agriculture, e-science), Tele-culture (Tele-education, Tele-medicine, tele-centre, Tele-phony)

3. Communication

Radio propagation in different waves (long wave to SHF), propagation characteristics, frequency availability, limitation element at VHF, UHF, discrete and continuous spectrums, stray capacitance, internal load inductance, dummy load, Traveling and standing waves, match and mismatch lines, distribution component of line, Variable impedance along a mismatched line, Tune circuit and filters, Phase velocity, phase shift, group velocity, wave guides, antenna fundamentals (types, characteristics, pattern, matching), Modulation & demodulation types and techniques for analogue and digital system, different types of Noise and calculation, frequency generation, counters. Random signal theory (Ergodic processes, correction function, white noise)

Section C- 20 Marks

4. Navigation, surveillance, Avionics

Radar range equation, Radar direction indication, Radar Display, different between PAR, SSR, Doppler effect, MTI Radar, HF-SSB communication, General concept of Navigation system (MLS, ILS, Radio Beacons and determinations, VOR, DME, GPS) and Airborne equipment (FIS, altimeter, ICAO Annex 11)

5. Frequency Management & Monitoring

Radio Frequency band and allocation, Frequency Channel plan (as per separation and system), spurious emissions, system (Simplex, duplex, dual) Type of radio services, Terrestrial line-of-sight communication links (propagation, effects of atmosphere, interference, fading) Broadcasting band, Frequency monitoring systems (techniques and procedures, scanning, location & direction finding), Satellite communication (orbital locations, choice of frequency, modulation techniques) and earth station (antenna, terminal equipment, ground networking, earthling) National Frequency Allocation Plan

Section D- 20 Marks

7. Management Concepts

Role of Science and technology in development, Parameters of development, Measurement of Development, Targeting Vision, mission, goal and objectives; strategies and work description of organization and its' structures, authority and power delegation, leadership, motivation, group's dynamics, time management, conflict management, use of MIS, decision support system, customer care, out sourcing, use of inventory and training, service port folio

8. Rules, Regulations & Policy

ITU overview, ICAO Overview, ICT policy, Telecommunication Policy, Telecommunication Act & Regulations, Radio Act & Regulations, National Broadcasting Act & Regulation, Cyber-law, National Frequency Allocation Plan

प्रथम चरणको लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई 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 ।

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| 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 ।