

ग्रामीण विकास लघुवित्त वित्तीय संस्था लि.
कम्प्युटर अधिकृत (अधिकृत सातौं तह)

खुला प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

पाठ्यक्रम

प्रथम पत्र :	वस्तुगत	पूर्णाङ्क ५०	समय १ घण्टा
द्वितीय पत्र :	विषयगत	पूर्णाङ्क १००	समय ३ घण्टा
प्रयोगात्मक :		पूर्णाङ्क ५०	समय २ घण्टा

प्रथम पत्र : विषयसँग सम्बन्धित वस्तुगत प्रश्नहरू ५० अंक (५० X १)

द्वितीय पत्र : विषयगत १०० अंक

(क)विषयसँग सम्बन्धित १३ प्रश्नहरू सोधिने छ । कुनै १० प्रश्नहरूको छोटो छोटो (Short Answer) उत्तर दिनुपर्ने छ । (१० X ५)

(ख)विषयसँग सम्बन्धित ७ प्रश्नहरू सोधिने छ । कुनै ५ प्रश्नहरूको उत्तर दिनु पर्नेछ । (५ X १०)

प्रयोगात्मक : निम्नानुसारको विषयहरूलाई आधार मानि प्रयोगात्मक परिक्षा लिईनेछ ।

- Trouble shooting computers, Printers, Network, UPS and Devices
- Installation of Operating system (Windows and Linux) and Configuration
- Performance tuning of the Machine
- Website design
- Software development using C++ and JAVA

Grameen Bikas Laghubitta Bittiya Sanstha Ltd.
Course of Study for Computer Officer 7th Level (Officer Level- IT)
I and II Paper

1. Computer Architecture
 - Basics of Computer Architecture, Registers, Memory Hierarchy, Cache Memory, External Memory, Memory Management, Direct & Indirect addressing
 - Organization of hard disk, RAID, Interrupt, Auxiliary Memory, Virtual Memory, Address Space, Paging
 - CPU Architecture, Parallel Processing, , CISC, RISC, Control Unit
 - I/O Management, I/O Interface, I/O Requests Handling, I/O Devices
2. Digital Design
 - Digital and Analog systems, Number systems
 - Logic Elements
 - Combinational Logic Circuits
 - Sequential Logic
 - Arithmetic Circuits
 - MSI Logic Circuits
 - Counters and Registers
 - IC Logic families
 - Interfacing with Analog Devices
 - Memory Devices
3. Basic Electronics
 - Semiconductors, Diodes and Diode Circuits, Transistor
 - Transister modeling
 - Biasing Amplification
 - Small signal Amplifiers and frequency response
 - Large signal Amplifiers, Feedback amplifiers and Oscillators
 - Operational Amplifiers
4. Computer Programming :
 - Procedural and Object Oriented Programming,
 - Software Development Models, SDLC
 - Procedures and Functions
5. Data Structure and Algorithm:
 - Stack, Queue, Linked list, Tree, Graph, Hashing, Sorting, Searching, Analysis of Algorithms
6. Software Engineering principles
 - Software process
 - Software project management

- System Analysis
- Software design
- Testing and Implementation

7. Database

Introduction (Application/Usage) of DBMS & RDBMS, ER concept, SQL for manipulating database objects and information from database, Normalization, Backup and restore, data mining and data warehousing

8. Operating System

- Introduction to Operating System, Type of Operating System, Function of Operating System, Memory Management using Operating System, 32 bit and 64 bit Operating System
- Distributed OS
- Windows and Linux Features

9. Computer Networks

- Introduction to computer network, Network architecture (LAN, MAN, WAN), Client server and peer-to-peer model, LAN architecture/standards (Token ring, Token bus).
- OSI Reference model, TCP/IP Reference model, Network Hardware and Software (NIC, Repeater, Hub, Bridge, Switch, Router, Gateway, DNS)
- Introduction to wireless LAN, Wi-Fi, TCP/IP, Subnet Mask and Subnetting, Classfull and Classless IP Addressing; Network Address Translation (NAT), Routing & Switching,
- Concepts on adding and removing devices in the network and domains. Sharing resources in the network.

10. Network security

- Cryptography, Digital Signature, Firewalls, Virtual Private Network (VPN), Data Encryption Standard

11. Artificial Intelligence

- Search
- Natural language processing
- Game Playing
- Learning
- Automated reasoning
- Planning
- Vision and Robotics

12. Compiler Design

- The structure of a compiler
- Lexical Analyzer
- Top down Parsing/Bottom up parsing
- Syntax Directed Translation
- Types and Type Checking
- Run-Time Storage Administration
- Intermediate Code generation

- Data-Flow Analysis and Code optimization
- Architecture and recent development on compilers

13. Multimedia Technology

- Sound / Audio System, Image and Graphics, Video and Animation, Data Compression, Teleconference, Data Synchronization

14. Web Technology

- HTML: Understanding Browsers, HTML Page Structure, Defining Web Layout, HTML Tags, Working with text/images/Tables/list/Links/ forms and its controls(Radio button, Check box, Text box, Drop-down list etc) , knowing get and post action, Use attribute Size/Max-length/Name attributes, Add/Submit/Reset Button;
- Script: Introduction to various types of script, working with variables & functions, Working with alert, confirm and prompt, Understanding loop, arrays, Creating rollover image, Working with operators;
- Style sheet : Introduction to Cascading Style Sheets, Types of Style Sheets (Inline, Internal and External), Class Selector, ID Selector Absolute Relative Positioning, Inline menu, CSS Layout Design, PSD to CSS Conversion
- XML

15. Emerging Technology

- Modeling and simulation
- Parellel and distributed computing
- High speed networks
- Artificial Neural network and computer vision
- Adaptive web Technology
- Software Architecture
- Distributed Object Technology (ORB,DCOM)
- Speech signal processing
- Cryptography and network Security
- E-commerce
- Software project management
- Embedded system
- Image processing
- Multimedia
- Expert system
- GIS/Remote sensing/GPS

16. Prevailing ICT related act, rules and regulation.