

FURTHER DETAILS REGARDING MAIN TOPICS (PART II) OF PROGRAMME NO.08/2010

COMPUTER PROGRAMMER – CUM - OPERATOR

CATEGORY No. 353/2008

1. Computer Fundamentals

Introduction to Computers - Stored program concept and Von Neumann architecture -History, Generation and Classification of computers - Computer architecture and organization - Representation of data - Input, Processing and Output - Computer Memory - Different Types of Computer Memory - RAM - ROM - EPROM - Secondary storage devices -Data processing fundamentals - Types of software - Popular operating systems - Application software - Generations of Computer Languages - Language Processors - Compilers - Translators - Interpreters - Assemblers

2. Document Processing Using Computers

Word processing under Windows - Worksheet basics - Editing - Formatting and Calculations - Printing - Creating charts and graphs - Printing - Creating presentations

3. Fundamentals of Computer Programming

Introduction to programming and history of programming languages - high level language - assembly language - machine language - Problem solving concepts - flow charts and algorithms - problem solving strategies - top down and bottom up approach -Procedural programming - Structured programming - Object Oriented Programming -Characteristics of different programming languages - Programming in C language

4. Operating Systems

Basic concepts of Operating Systems- Different types of Operating Systems -Information Management - File systems - Processor Management - Memory Management - Device Management - Protection of resources - Typical Operating System characteristics MSDOS - Windows - Windows NT - NETWARE - UNIX –LINUX

5. Introduction to Systems Analysis and Software Engineering

Introduction to Systems - Components of a System - Responsibility of System Analyst –

Fundamentals of Software Engineering - Software Process Models - Software Development phases - Requirement Specification - Structured and Object Oriented Analysis and Design - Unified Modeling Language (UML) basics - Testing and Quality Assurance of Software - Software Maintenance

6. Principles of Database Management Systems

Data models - Database languages - Data base users - Database administration - Entity-Relationship (ER) modeling - E-R diagrams - Relational model - Structure of relational databases- Basics of Structured Query Language (SQL) - Relational Database Management Systems (RDBMS) - Relational database design - Decomposition -functional - multivalued and join dependencies - Normal forms - Database design and structure

7. Data Communication Fundamentals and Computer Networks

Networking Concepts - Local Area Networks(LAN) - Wide Area Networks (WAN) - Components of LAN - Network Topology - Star - Ring and Bus - Protocols for networking - CSMA/CD - TCP / IP- OSI Model - Seven Layers and Functions -Protocols of TCP / IP and its layers - Data link layer - Network layer protocol - Other protocols : ARP / RARP / ICMP, UDP and TCP - TCP / IP applications - Telnet -Rlogin - E-mail - Mount.

8. Internet and New Trends

Background and history - Protocols - TCP/IP - HTTP - Web browsers - Search Engines
Designing of Web pages Intranet - Shared Bandwidth LAN - Switched Networking in LAN – Switching concepts & work group LAN switches - High speed FDDI - ATM -100 BASE T(Fast Ethernet) - Virtual LANs (VLAN) - Shared Bandwidth LAN - High speed FDDI - ATM -100 BASE T (Fast Ethernet) - Virtual LAN(VLAN).

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.

