

पाठ्यक्रम

छत्तीसगढ़ उच्च न्यायालय, बिलासपुर के अंतर्गत
सहायक रजिस्ट्रार (I.T.) एवं कम्प्यूटर प्रोग्रामर

कुल अंक -150

Section I:

50 Marks

➤ Details of Section I:

1. Analytical Reasoning Skills, Quantitative Skills: Arithmetic, Elementary Algebra, Commonly known concepts of Geometry-(20 marks)
2. Verbal Skills: Reading Comprehension, Sentence Correction, and Sentence Completions, English Language-(15 marks)
3. General Awareness and Current Affairs -(15 marks):

Section II:

100 Marks

➤ Details of Section II:

Digital Logic: Boolean algebra. Combinational and sequential circuits. Minimization. Number representations and computer arithmetic (fixed and floating point).

Computer Organization and Architecture: Machine instructions and addressing modes. ALU, data-path and control unit. Instruction pipelining. Memory hierarchy: cache, main memory and secondary storage; I/O interface (interrupt and DMA mode).

Programming and Data Structures: Programming in C. Recursion. Arrays, stacks, queues, linked lists, trees, binary search trees, binary heaps, graphs.

Algorithms: Searching, sorting, hashing. Asymptotic worst case time and space complexity. Algorithm design techniques: greedy, dynamic programming and divide-and-conquer. Graph search, minimum spanning trees and shortest paths.

Theory of Computation: Regular expressions and finite automata. Context-free grammars and push-down automata. Regular and context-free languages, pumping lemma. Turing machines and undecidability.

Compiler Design: Lexical analysis, parsing, syntax-directed translation. Runtime environments. Intermediate code generation.

Operating System: Processes, threads, inter-process communication, concurrency and synchronization. Deadlock. CPU scheduling. Memory management and virtual memory. File systems. UNIX, Linux, Windows XP.

Databases: ER-model. Relational model: relational algebra, tuple calculus, SQL. Integrity constraints, normal forms. File organization, indexing (e.g., B and B+ trees). Transactions and concurrency control.

Computer Networks: Concept of layering. LAN technologies (Ethernet). Flow and error control techniques, switching. IPv4/IPv6, routers and routing algorithms (distance vector, link state). TCP/UDP and sockets, congestion control. Application layer protocols (DNS, SMTP, POP, FTP, HTTP). Basics of Wi-Fi. Network security: authentication, basics of public key and private key cryptography, digital signatures and certificates, firewalls.

System Programming: Assemblers, Macros, Basic Loader Function, Bootstrap Loader, Relocation and linking concepts, Compiler Design (Options, Interpreter, P-Code Compiler), Compiler. Software Tools for Program Development, Editors, Debug, Monitors, Programmes, Environments user Interfaces.

Software Engineering:

S/W Engineering Discipline Evolution and Impact, Program vs S/W Product, Emergence of S/W Engineering. Software Life Cycle Models. Software Project Management. Requirements Analysis and Specification. Object Modelling using UML. Coding and Testing. Software Reliability and Quality Management. Software Maintenance. Software Reuse.

Web Application Design & Development: HTML, JavaScript, CSS, Client/Server Side Programming using Php. Creating dynamic websites, error handling and debugging, Php MySQL/Oracle Database Connectivity.

SYLLABUS FOR SKILL TEST FOR THE POST OF ASST. REGISTRAR (IT) AND COMPUTER PROGRAMMER

Asst. Registrar (IT)	<p>Hardware: Networking including knowledge of OFC connection Server installation and Maintenance SAN Storage and Clustering</p> <p>Software: Programming knowledge of PHP Database : Postgres SQL Server Administration (Web Server, File Server and Database Server) (Total marks for Skill Test : 50 marks)</p>
Computer Programmer	<p>Programming knowledge of PHP Database: Postgres SQL System Software (Linux), Shell Script (Total marks for Skill Test : 50 marks)</p>

The unreserved candidates shall have to secure minimum 50% marks and SC, ST & OBC category candidates shall have to secure minimum 40% marks for qualifying the respective skill tests mentioned above.

The select lists for the posts will be prepared on the basis of total marks obtained by the candidates in the respective Written, Skill Tests & Interview

