

Selection Criteria and Scheme of Examination for the direct recruitment for the post of Computer Programmer, Pay Level – 7.

1. Method of Recruitment:

The method of Recruitment will be **Written Test followed by Skill Test.**

2. Scheme of Examination

The examination will be in two phases, Phase – I & Phase-II. Phase-I will be Written Test and Phase-II will be Skill Test (Practical). The details are as under:

PHASE-I (WRITTEN TEST)

1.	Examination	Written Test
2.	Mode of Examination	ONLINE/OFFLINE
3.	Duration of Examination	2 Hours
4.	Type of Examination	Subjective/Objective
5.	Maximum Marks	60 marks
6.	Minimum qualifying marks	30 out of 60

PHASE-II (SKILL TEST)

1.	Examination	Skill Test
2.	Mode of Examination	ONLINE
3.	Duration of Examination	2 Hours
4.	Type of Examination	Skill based (Practical)
5.	Maximum Marks	40 marks
6.	Minimum qualifying marks	20 out of 40

3. SELECTION CRITERION

1. The selection process shall consist of following Papers:
 - A. Objective Type Test (Paper – I)
 - B. Skill Test (Paper – II)
2. The Objective type test (Paper – I) shall be conducted first.
3. Only those who qualify in the written test (minimum 50% marks) will be eligible for the Skill Test. The qualifying marks for Skill Test will also be 50% of the maximum marks. A merit list of such candidates will be prepared with the **sum total of the marks obtained by the candidate in both Written and Skill Test.**
4. PWD (VH and Cerebral Palsy) candidates will be allowed Scribe and extra time for written test as per Govt. of India Rules.
5. The standard of questions will be of level as per essential qualifying degree / experience required for the post.
6. Medium – English.
7. In case of Tie where more than one candidate secures the equal aggregate marks, the tie will be resolved by applying the following methods one after another:

- a) By referring to the marks in Skill test.
- b) Date of birth i.e., the candidate older in age gets preference.
- c) By referring to the alphabetical order of the names taking first name into consideration.

4. **SYLLABUS**

(i) **Syllabus for Written Examination (Phase-I)**

S. No.	Topics
1.	A Brief History of Computers, Designing for Performance, Von Neumann Architecture, Hardware Architecture, Computer Components, Interconnection Structures, Bus Interconnection, Scalar Data Types, Fixed and Floating-Point Numbers, Signed Numbers, Integer Arithmetic, 2's Complement Method for Multiplication, Booths Algorithm, Hardware Implementation, Division, Restoring and Non Restoring algorithms, Floating point representations, IEEE standards, Floating Point Arithmetic.
2.	<u>Software Engineering</u> Importance of Software Engineering Paradigms, Life Cycle Models-Waterfall Model, Prototyping Model, Spiral Model, RAD; Requirement Analysis, Design process, Software Project Planning, Cost Estimation, Software Quality Assurance, Software Testing
3.	<u>Operating Systems</u> Structure and Interface, Memory Management, Process Management, Interrupt Handling, Timing and Synchronization, Device Driver, File System, Virtual Machines, Windows and Linus OS
4.	<u>Algorithms and Data Structures</u> Order Notation, Recurrence, Counting and Probability, Elementary Data Structures such as lists, stacks, queues, binary search trees. Sorting Algorithms: External Sorting Branch & Bound Method Dynamic Programming
5.	<u>Networks, Network Security and Web Security</u> Overview of Networking LAN, VLAN, MAN, WAN, Internet and Intranet etc Server-Client based network, peer to peer networks, Network Hardware and Components, concept of Server, client, node, segment, backbone, host etc. Analog and Digital transmission, Functions of Network Interface Card (NIC), Repeaters, Hub, Switches, Routers, Bridges etc. Transmission Media and Topologies media types, Protocol and Services, OSI Model, Media Access Method, FTP, SMTP, HTTP, POP3, DNS, IMAP, MIME, WINS and RAS services, Web services , Proxy Services etc; Routing protocols, TCP/IP and Sub-nettings, TCP/IP Errors and Solutions, Network Management (SNMP,

	RMON, DHCP) Cryptography, Firewalls, Wireless and Mobile Data Services, Wireless Technology, Mobile Communications, Network Security, Public Key encryption, Hashing, Digital Signature, Web Security, System Security, Intruders, Malicious Software
6.	<p><u>Programming</u></p> <p>Static and Dynamic Web Pages, DHTML, CSS, Active Web Pages, Java Script, Servlet API, The servlet life cycle, Cookies and Sessions, JSP, CGI, ODBC, JDBC, Java, J2EE, PHP, Python, ASP.NET, LAMP, WAMP, XAMP</p>
7.	<p><u>Search Engine Optimization</u></p> <ul style="list-style-type: none"> • Improving the overall user experience of a site (making your content easy for users to find and engage with)-this will encourage repeat visits and links from other sites, all of which increase search engine ranking. • Optimizing site architecture (the actual coding and design of a website) • Mobile friendly design –since the majority of users now view websites on a phone or other mobile device (opens in a new tab), Google rewards sites that are designed to be as easily viewed on a small screen as they are on a desktop computer.
8.	<p><u>Mobile Application Development (Android and iOS Mobile Platforms)</u></p> <ul style="list-style-type: none"> • Android: Experience with Android SDK concepts, Android Studio etc. • iOS: Knowledge of Swift 3.0 programming language, Apple’s Xcode IDE etc.
9.	<u>Knowledge on Advanced Technologies like Blockchain, Artificial Intelligence</u>

(ii) Syllabus for Skill Test (Phase-II)

S. No.	Topics
1.	Programming Skills like PHP, JAVA, Python, .NET, Android Application
2.	Database Design Skills like Hadoop, My SQL, Oracle
3.	Servers like Windows, Apache, Linux

Registrar