



ગુજરાત જાહેર સેવા આયોગ

છ-૩ સર્કલ પાસે, છ રોડ, સેક્ટર-૧૦/એ, ગાંધીનગર-૩૮૨૦૧૦

જા.ક.૧૦૯/૨૦૨૪-૨૫, નાયબ નિયામક(આઇ.ટી.), વર્ગ-૧ ના સંશોધિત

અભ્યાસક્રમ બાબત.

૧. તા.૦૧/૦૨/૨૦૨૫ના રોજ જા.ક.૧૦૯/૨૦૨૪-૨૫ નાયબ નિયામક(આઇ.ટી.), વર્ગ-૧ના સંયુક્ત અભ્યાસક્રમ પ્રસિદ્ધ કરવામાં આવેલ.

૨. સદર સંયુક્ત અભ્યાસક્રમમાં ભાગ-૧ "સામાન્ય અભ્યાસ"નો અભ્યાસક્રમ યથાવત રહેશે. તથા ભાગ-૨ "સંબંધિત વિષય"નો સંશોધિત અભ્યાસક્રમ આ સાથેના બિડાણ મુજબનો ધ્યાને લેવાનો રહેશે. જેની સંબંધિત ઉમેદવારોએ નોંધ લેવા વિનંતી.

તા. ૦૬/૦૨/૨૦૨૫

સંયુક્ત સચિવ
ગુજરાત જાહેર સેવા આયોગ



ગુજરાત જાહેર સેવા આયોગ

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**Syllabus for the preliminary test for the recruitment
on the post of Deputy Director (IT), Class-I under
Science and Technology Department
Advertisement No. 109/2024-25**

Part-II (Concerned Subject)

Marks – 200

Questions – 200

Medium-English

1. **Programming and Data Structures :**
Programming and Data Structures Programming in C.
Recursion. Arrays, stacks, queues, linked lists, trees, binary
search trees, binary heaps, graphs.
2. **Discrete Mathematics:**
Propositional and first order logic. Sets, relations, functions,
partial orders and lattices. Groups. Graphs: connectivity,
matching, coloring. Combinatorics: counting, recurrence
relations, generating functions.
3. **Algorithms:**
Analysis, Asymptotic notation, Space and Time Complexity,
Worst case and average analysis, Divide and conquer, tree
and graph traversals, Searching, sorting & hashing
Algorithms, Algorithm design techniques: greedy, dynamic
programming and divide-and- conquer. Graph search,
minimum spanning trees,,and shortest paths.
4. **Databases:**

Integrity constraints, Normal forms, File organization, Indexes, B and B+ trees, Transaction processing, various types of schedules, concurrency control.

5. Hardware and Operating Systems:

Basic knowledge of Hardware Operating System Processes, threads, inter-process communication, concurrency and synchronization. Deadlock. CPU scheduling. Memory management and virtual memory. File systems.

6. Computer Networks:

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.

7. Analytics:

Descriptive and predictive analytics, OLAP, differences between OLTP and OLAP systems, Data Cubes, Data Warehousing, star, snowflake and fact constellation schema models, overview data mining techniques, in-database Analytics, Advanced SQL.

8. NoSQL Databases:

Differences between SQL and NoSQL, Different representation of NoSQL data types, CAP theorem, properties of NOSQL Databases.

9. Data Centre:

Data storage, Data availability, Data management; Cloud Infrastructure, Virtualization, Pipelining; Public cloud,

private cloud, hybrid cloud; Businessdata/ service scalability, reliability.

10. Mobile Application:

Mobile platforms, Phones, PDAs, Cellular Technologies-@G, 3G, 4G, GSM, CDMA networks, App Development, UI design.

11. Software Engineering:

Software engineering principles, Agile Programming, Software Testing and project management, SLA, SCADA, Software quality.

12. Cyber Security:

Threats, Vulnerabilities and attacks, data security, data privacy, data protection, Ethical hacking, DoS attacks, WiFi hotspot, Botnet, IT security and risk management, CERT-In roles and functions, National Cyber Security Policy-2013, Cyber Laws, Roles and Responsibilities of CISO(Chief Information Security Officer), IT Act 2000 as amended from time to time.

13. E-Governance:

Roles of Electronic Commerce ©, Business (B), Governance (G) in Digital India; G2G, C2C, C2B, C2G, B2C; Collaborative APIs; Collaborative application development; Collaborative digital. platforms; Electronic Data Interchange (EDI); Enterprise resource planning (ERP), Citizen Relationship Management; IT/ITeS usage policy devising for organization and enterprise application; familiarity in COBIT5; Smart villages and smart cities; e-Utilities to citizens, Services on demand; e-Empowerment, e-Employment; e- Learning, various modes of digital payments, digital libraries; Public safety, ethics and social responsibilities.

14. General awareness of IT Projects:

Mission Mode Projects, Digitization India Platform (DIP), Digital locker, GI CLOUD (MEGHARAJ), E-KRANTHI etc., E-governance policies and programmes, Gujarat IT/ITeS policy 2022-27, Various organization of Union and State Government related to Information and Technology, Science, Technology and Innovation Policy of Gujarat, Legislative framework in our Country in the field of IT.

**15. Current Trends and Recent Advancement in the
Field of
Information Technology.**

