



ગુજરાત જાહેર સેવા આયોગ

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

જા.ક.૩૧/૨૦૨૧-૨૨

જગ્યાનું નામ: આઇ. સી. ટી. ઓફીસર, વર્ગ-૨
(વિજ્ઞાન અને પ્રૌદ્યોગિકી વિભાગ)

ભાગ-૧ અને ભાગ-૨ ના ૧૮૦ મિનિટના સંયુક્ત પ્રશ્નપત્રની પ્રાથમિક કસોટીનો
અભ્યાસક્રમ

પ્રાથમિક કસોટીનો અભ્યાસક્રમ	
ભાગ-૧	
માધ્યમ: ગુજરાતી	કુલ ગુણ : ૧૦૦
૧	ભારતની ભૂગોળ- ભૌગોલિક, આર્થિક, સામાજિક, કુદરતી સંસાધન અને વસ્તી અંગેની બાબતો- ગુજરાતના ખાસ સંદર્ભ સાથે
૨	ભારતનો સાંસ્કૃતિક વારસો- સાહિત્ય, કલા, ધર્મ અને સ્થાપત્યો- ગુજરાતના ખાસ સંદર્ભ સાથે
૩	ભારતનો ઇતિહાસ- ગુજરાતના ખાસ સંદર્ભ સાથે
૪	ભારતની અર્થવ્યવસ્થા અને આયોજન
૫	ભારતીય રાજનીતિ અને ભારતનું બંધારણ: (૧) આમુખ (૨) મૂળભૂત અધિકારો અને ફરજો (૩) રાજ્યનીતિના માર્ગદર્શક સિદ્ધાંતો (૪) સંસદની રચના (૫) રાષ્ટ્રપતિની સત્તા (૬) રાજ્યપાલની સત્તા

	(9) न्यायतंत्र (10) अनुसूचित जाति, अनुसूचित जनजाति અને સમાજના પછાત વર્ગો માટેની જોગવાઈઓ (11) એટર્ની જનરલ (12) નીતિ આયોગ (13) પંચાયતી રાજ (14) નાણા પંચ (15) બંધારણીય તથા વૈધનિક સંસ્થાઓ- ભારતનું ચૂંટણી પંચ, સંઘ લોક સેવા આયોગ, રાજ્ય લોક સેવા આયોગ, કોમ્પ્રોલર એન્ડ ઓડિટર જનરલ; કેન્દ્રીયસતર્કતા આયોગ, લોકપાલ તથા લોકાયુક્ત અને કેન્દ્રીય માહિતી આયોગ
5	સામાન્ય બૌદ્ધિક ક્ષમતા કસોટી
9	સામાન્ય વિજ્ઞાન, પર્યાવરણ અને ઈન્ફર્મેશન એન્ડ કોમ્યુનિકેશન ટેકનોલોજી
10	ખેલ જગત સહિત રોજબરોજના પ્રાદેશિક, રાષ્ટ્રીય અને આંતરરાષ્ટ્રીય મહત્વના બનાવો

Syllabus of Preliminary Test

Part-1

Medium: Gujarati

Total Marks-100

1	Geography of India-Physical, Economic, Social, Natural Resources and population related topics- with special reference to Gujarat
2	Cultural heritage of India-Literature, Art, Religion and Architecture- with special reference to Gujarat
3	History of India with special reference to Gujarat
4	Indian Economy and Planning
5	<u>Indian Polity and the Constitution of India:</u> 1. Preamble 2. Fundamental Rights and Fundamental Duties 3. Directive Principles of State Policy 4. Composition of Parliament 5. Powers of the President of India 6. Powers of Governor 7. Judiciary 8. Provisions for Scheduled Castes, Scheduled Tribes and backward classes of the society 9. Attorney General 10. NITIAayog 11. Panchayati Raj Institutions 12. Finance Commission 13. Constitutional and Statutory Bodies: Election Commission of India, Union Public Service Commission, State Public Service Commission,

	Comptroller and Auditor General; Central Vigilance Commission, Lokpal and Lokayukta, Central Information Commission
6	General Mental Ability
7	General Science, Environment and Information & Communication Technology
8	Daily events of Regional, National and International Importance including Sports

Part-2

Advt. No. 31/2021-22

**Syllabus for the preliminary test for the recruitment on the
post of ICT Officer, Class-II under
Science and Technology Department**

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. Operating Systems:**
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.

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 2016-21, 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.
