

જાહેરાત ક્રમાંક : ૬૮/૨૦૧૬-૧૭

જગ્યાનું નામ :- આઇ.સી.ટી.ઓફિસર, વર્ગ-૨ (વિજ્ઞાન અને પ્રૌદ્યોગિકી વિભાગ)
ભાગ-૧ અને ભાગ-૨ ના ૧૦૦ 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	<u>ભારતીય રાજનીતિ અને ભારતનું બંધારણ:</u> (૧) આમુખ (૨) મૂળભૂત અધિકારો અને ફરજો (૩) રાજ્યનીતિના માર્ગદર્શક સિદ્ધાંતો (૪) સંસદની રચના (૫) રાષ્ટ્રપતિની સત્તા (૬) રાજ્યપાલની સત્તા (૭) ન્યાયતંત્ર (૮) અનુસૂચિત જાતિ, અનુસૂચિત જનજાતિ અને સમાજના પછાત વર્ગો માટેની જોગવાઈઓ (૯) એટર્ની જનરલ (૧૦) નીતિ આયોગ (૧૧) પંચાયતી રાજ (૧૨) નાણા પંચ (૧૩) બંધારણીય તથા વૈધનિક સંસ્થાઓ- ભારતનું ચૂંટણી પંચ, સંઘ લોક સેવા આયોગ, રાજ્ય લોક સેવા આયોગ, કોમ્પ્ટ્રોલર એન્ડ ઓડિટર જનરલ; કેન્દ્રીયસતર્કતા આયોગ, લોકપાલ તથા લોકાયુક્ત અને કેન્દ્રીય માહિતી આયોગ
૬	સામાન્ય બૌદ્ધિક ક્ષમતા કસોટી
૭	સામાન્ય વિજ્ઞાન, પર્યાવરણ અને ઇન્ફર્મેશન એન્ડ કોમ્યુનિકેશન ટેકનોલોજી
૮	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

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કુલ પ્રશ્નો : ૨૦૦

કુલ ગુણ : ૨૦૦

માધ્યમ : અંગ્રેજી

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, digital libraries; Public safety, ethics and social responsibilities.

▪ **Networking (SWAN):**

The OSI model: Transmission media (Twisted – pair, Coaxial, Optical Fiber); data communication, multiplexing (FDM, WDM, TDM) ; Packet switching , circuit switching, Network architecture and topology – LAN, MAN, SWAN, WAN; TCP/IP; point –to-point protocol; Boarder Gateway protocol; voice over IP (VoIP); ISDN, Virtual Private Network, Routers, Switches, Bridges; Routing protocols; Wireless LAN, Wi-Fi; Network security and reliability, Firewall, Network Programming and Internetworking Technologies.

▪ **Data Centre:**

Data storage, Data availability, Data management; Cloud Infrastructure, Virtualization, Pipelining; Public cloud, private cloud, hybrid cloud; Business data/ service scalability, reliability, analytics; Data mining, Data warehouse; Distributed computing – Hadoop, Map Reduce; Business intelligence; Business continuity planning.

▪ **Database :**

Integrity Constraints, Normal Forms, File Organization, Indexing (E.G., B and B+ Trees), Transactions and Concurrency Control, Data Storage Technologies and Networks

- **Mobile Application:**

Mobile platforms, Phones, PDAs; Cellular technology-2G, 3G, 4G, GSM, CDMA networks; App development; UI design, development, Browsers; Java ME, IOS SDK, Android SDK; Virtual Machines, SOA; Mobile enterprise application platforms, IDEs; Mobile app servers ; Emulator and tools for testing mobile and web apps.

- **Software Development:**

Understanding in programming concepts; practical knowledge in HTML/XML/PHP/Java/Ajax; Familiarity in Open source tools usage in software development; platforms and Operating systems; Web servers – Microsoft IIS, Apache, Web services and applications; Software process and SDLCs; DBMS, SQL; Feasibility and Requirement analysis; Software design, software testing and maintenance; Software quality, assurance, certification; SCADA, Service-Level Agreement (SLA).

- **Systems Engineering:**

1. Introduction, Classification Of Simulation Models, Computer Simulation Packages For Management, Development Of Models For Manufacturing Systems and Service Systems, Model Development For Supply Chain, Development Of DSS Based On Simulation.
2. The Simulation Process, Enterprise System Investigation, Model Formulation, Validation and Translation, Tactical Planning and Management Aspects, Time Flow Mechanism of Enterprise Systems
3. Systems Simulation Computer Simulation of Systems. Design of Simulation Models of Discrete Systems. Statistical Foundations and Methodology. Generation of Random Variants.
4. Design of Simulation Experiments. Simulation Programming Languages. Applications: The Analysis and Design of Systems for Production and Distribution.
5. Model Validation. Simulation Output Analysis. Use of Software.

- **Algorithms:**

Analysis, Asymptotic Notation, Notions of Space and Time Complexity, Worst and Average Case Analysis; Design: Greedy Approach, Dynamic Programming, Divide-And-Conquer; Tree and Graph Traversals, Connected Components, Spanning Trees, Shortest Paths; Hashing, Sorting, Searching. Asymptotic Analysis (Best, Worst, Average Cases) of Time and Space, Upper and Lower Bounds, Basic Concepts of Complexity Classes – P, NP, NP-HARD, NP-Complete.

- **Cyber Security:**

Threats, Vulnerabilities and attacks for organizations; Data security, Data privacy, Data protection; Privacy implications in social network; Hackers and Crackers; Ethical Hacking, Denial of Service attacks, WIFI Hotspot, Botnet, Cybercrimes and the Indian IT Act 2000 (amended from time to time), IT security risk management, ISO/IEC 27000, Indian Computer Emergency Response Team (CERT-In) Roles and Functions

- **State and Central Government IT Infrastructure and Various Projects**

Mission Mode Projects (Mission Mode Projects Central MMPs State MMPs Integrated MMPs), Digitize India Platform (DIP), Digital Locker, GI CLOUD (MEGHRAJ), State Data Centre, E-KRANTI etc., State and Central Government current E-Governance Programmes

- **Image Processing and Artificial Intelligence for E-Governance**

- **Gujarat IT/ITeS Policy 2016-21**

- **Current Trends and Recent Advancement in the relevant field**