

PART-B

SYLLABUS FOR TECHNICAL ASSISTANT (D.C.A.) & COMPUTER OPERATOR (D.C.A.) (120 Marks)

The following subjects will be covered in the MCQ Exam.

Each question = **1 mark**

MARK DISTRIBUTION (Revised for 120 Marks)

Topic No.	Subject Name	Questions	Marks
1	Computer Fundamentals	10	10
2	Operating System (Windows & Linux)	10	10
3	MS Office (Word, Excel, PowerPoint)	15	15
4	Computer Networking	10	10
5	Programming Fundamentals	10	10
6	DBMS & SQL	15	15
7	Web & Mobile Technologies	15	15
8	Advanced Computer Application Topics	05	05
9	Computer Troubleshooting & Maintenance	10	10
10	Digital Marketing Basics	5	5
11	Social Media & Online Platforms	5	5
12	Gujarat Government Portals & Application Information	10	10
TOTAL	12 Topics	120 Questions	120 Marks

DETAILED SYLLABUS (TOPIC-WISE)

1. Computer Fundamentals – 10 Questions (10 Marks)

- Characteristics & Generations of Computers
 - Types of computers (Analog, Digital, Hybrid)
 - Hardware components (Motherboard, CPU, ALU, CU)
 - Software types (System, Application, Utility, Firmware)
 - Number systems & conversions (binary, octal, hex, decimal)
 - ASCII, Unicode
 - Input devices (scanner, OCR, barcode, biometric)
 - Output devices (printers, plotters, monitors)
 - Memory hierarchy & storage devices (SSD, HDD, Pen drive)
 - Booting: cold vs warm boot
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2. Operating System (Windows & Linux) – 10 Questions (10 Marks)

- OS types (batch, multiuser, real-time, embedded)
 - Windows OS settings, control panel, task manager
 - Linux directory structure
 - Windows CMD commands (dir, copy, taskkill, ping)
 - Linux commands (ls, cd, mkdir, rm, chmod, chown, ps)
 - Processes, threads, scheduling
 - File permissions, access control
 - System utilities, registry basics
 - Disk management, partitioning
 - User/group management
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3. MS Office (Word, Excel, PowerPoint) – 15 Questions (15 Marks)

MS Word

- Formatting, styles, page layout
- Header/footer, page numbers
- Mail merge (labels, forms)
- Tables & charts in Word
- Review tools: comments, track changes

Excel

- Basic & advanced formulas (SUMIF, IF, VLOOKUP, HLOOKUP)
- Pivot tables, pivot charts
- Data validation, filtering, sorting
- Conditional formatting
- Charts (bar, pie, line)

PowerPoint

- Slide master
 - Animations & transitions
 - Hyperlinks & audio/video
 - Design themes
 - Printing formats (notes, outline)
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4. Computer Networking – 10 Questions (10 Marks)

- Networking devices (hub, switch, router, access point,ftp)
 - IP Address (IPv4/IPv6), Public vs Private
 - Subnetting basics
 - OSI model layers & functions
 - TCP/IP suite
 - DNS, DHCP
 - Wi-Fi standards, Bluetooth basics
 - Network topologies
 - Cyber threats (DoS, spoofing)
 - Network troubleshooting commands (ping, tracert, ipconfig)
 - Networking Tools (Remote desktop,TeamViewer,AnyDesk)
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5. Programming Fundamentals – 10 Questions (10 Marks)

- Variables, constants, data types
 - Operators (arithmetic, relational, logical)
 - Type casting
 - Control statements (if, switch, loops)
 - Arrays & strings
 - Functions & parameters
 - Introduction to OOP (class, object, constructor etc.)
 - File handling basics
 - Debugging concept
 - Pseudocode & flowcharts
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6. Database Management System (DBMS & SQL) – 15 Questions (15 Marks)

- DBMS vs RDBMS
- Entity, Attributes, Relationships
- ER Model
- Keys (Primary, Foreign, Unique, Composite)
- Normalization (1NF, 2NF, 3NF)
- SQL DDL/DML (CREATE, SELECT, INSERT, DELETE, UPDATE)
- Joins (INNER, LEFT, RIGHT)
- Views, Indexes

- ACID properties
 - Backup & restore basics
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7. Web & Mobile Technologies – 15 Questions (15 Marks)

- HTML tags, forms, attributes
 - CSS selectors, classes, inline vs external CSS
 - JavaScript basics (variables, functions, events)
 - Client-server model
 - HTTP methods (GET, POST)
 - Web domain, hosting, DNS records
 - Basics of PHP/ASP.NET
 - Responsive design basics
 - Mobile operating systems (Android/iOS)
 - API basics
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8. Advanced Computer Application Topics – 5 Questions (05 Marks)

- Cloud models (IaaS, PaaS, SaaS)
 - Virtual machines, containers
 - Cyber security threats (malware, ransomware, phishing)
 - Encryption types
 - AI basics (ML, deep learning)
 - Chatbots basics
 - SDLC phases (waterfall, agile)
 - Version control (Git basics)
 - IoT fundamentals
 - E-commerce basics
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9. Computer Troubleshooting & Maintenance – 10 Questions (10 Marks)

- System boot errors & solutions
 - Device drivers installation
 - Printer troubleshooting
 - BIOS/UEFI basics
 - Antivirus/firewall configuration
 - Backup & restore
 - Network troubleshooting tools
 - Disk cleanup, defragment
 - UPS types & maintenance
 - Application crash troubleshooting
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10. Digital Marketing Basics – 5 Questions (5 Marks)

- SEO on-page & off-page
 - Google ranking factors
 - SEM / Google Ads bidding
 - PPC model
 - Email marketing workflow
 - Funnels & landing pages
 - Web traffic analytics
 - Content marketing basics
 - CTR, CPC, CPM metrics
 - Affiliate marketing basics
 - Effective Google search filters
 - Online verification of documents
 - Browser settings, extensions
 - Download/upload rules
 - Safe browsing practices
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11. Social Media & Online Platforms – 05 Questions (05 Marks)

- Facebook/Instagram page setup
 - Social media post formats
 - Email management
 - Hashtag strategy
 - Reels & Shorts basics
 - Social media algorithms
 - Engagement rate
 - Organic vs Paid Ads
 - Social media insights/analytics
 - Safety, reporting, privacy
 - WhatsApp Business features
 - Digital India components
 - Aadhaar authentication
 - DigiLocker system
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12. Gujarat Government Portals & Applications – 10 Questions (10 Marks)

- Digital Gujarat: services, certificates
- GSWAN basics
- e-Gram services
- IFMS, Treasury Portal
- RTO Parivahan services
- AnyRoR land records
- TeCHO+ App (health)
- Ayushman Bharat
- Online application tracking
- Government mobile apps (mParivahan, UMANG)