

**PART-B (2)**

**SYLLABUS FOR TECHNICIAN A (USIC)**

**(120 Marks)**

The following subjects will be covered in the MCQ Exam.  
Each question = **1 mark**

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**MARK DISTRIBUTION (Revised for 120 Marks)**

<b>Topic No.</b>	<b>Subject Name</b>	<b>Questions</b>	<b>Marks</b>
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
<b>TOTAL</b>	<b>12 Topics</b>	<b>120 Questions</b>	<b>120 Marks</b>

## 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)