

FBLA HS Technology Support and Services*

IT Fundamentals (25 test items)

1. Describe the responsibilities of each layer of the OSI model
2. Discuss features of Windows for personal and enterprise environments
3. Discuss features of MacOS for mobile and PC systems
4. Apply command-line networking and troubleshooting tools for Windows and Linux (e.g., ipconfig, fsck, ping, tracert)
5. Describe computer components (e.g., CPU, motherboard, GPU)
6. Interpret software requirements (e.g., 32-bit vs. 64-bit, memory, storage)
7. Describe best practices for digital security and privacy (e.g., VPN, password managers, firewalls)
8. Describe common security vulnerabilities and threats (e.g., out-of-date systems, SQL injection, DDoS)
9. Explain how information is exchanged between a computer and a network (e.g., packets, requests, servers)
10. Describe the functions of DNS and DHCP
11. Describe the functions of IP addresses in networked environments
12. Describe the key hardware components of a network (e.g., clients and servers, switches, routers, modems)

* Sources: These learning outcomes are based on content from the CompTIA A+ Certification Exam Core 1 and 2 Objectives and Google IT Support Professional Certificate.

Service Desk Operations (20 test items)

1. Explain the importance of service and help desk teams in an organization
2. Discuss when tickets should be escalated
3. Discuss the role of IT Service Management (ITSM) in business
4. Discuss the functions of service desk software (e.g., JIRA, Zoho)
5. Describe service desk support tiers and their responsibilities
6. Discuss methodology for solving tech problems (e.g., identifying problem, testing theories, developing plans of action)
7. Describe the role of ticketing systems in IT support
8. Describe best practices for identifying and removing malware from systems

Hardware and Software Troubleshooting (30 test items)

1. Apply the best practice methodology to investigate tech problems
2. Distinguish between hardware and software problems
3. Describe solutions to common printer issues (e.g., connectivity, refillables)
4. Discuss common issues with mobile devices (e.g., battery life, overheating, connectivity)
5. Describe symptoms of problems with RAM, CPU, and storage
6. Describe tools used to fix and troubleshoot devices (e.g., multimeter, freeze spray, compressed air)
7. Distinguish between devices that need fixing, upgrading, or replacing
8. Troubleshoot common Windows OS problems (e.g., BSOD, crashing, slow performance)
9. Describe best practices for removing malware from a system
10. Describe indicators of malware on a device
11. Describe common solutions to hardware problems (e.g., restarting, unplugging, resting)
12. Describe common cable and connector types (e.g., USB, lightning, HDMI)
13. Describe types and parts of a liquid crystal display
14. Describe the boot process and options for its configuration

IT Management and Administration (25 test items)

1. Describe the role of change management in business and IT management
2. Describe elements of change request documents (e.g., time of change, rollout/backout plan, anticipated impact)
3. Discuss the use of remote access methods for IT administration (e.g., troubleshooting, testing, installing, updating)
4. Describe remote and virtual access software and protocols (e.g., SSH, RMM, RDP, VPN)
5. Describe file transfer services and protocols (e.g. FTP, Google Drive, OneDrive)
6. Discuss printer configuration settings (e.g., tray settings, duplex, orientation)
7. Describe types of printers (e.g., thermal, 3D, inkjet, laser)
8. Describe the use of load balancers in cloud environments and physical servers
9. Discuss key features of Active Directory
10. Describe the characteristics of different cloud services (e.g., SaaS, PaaS, IaaS)
11. Discuss spam mitigation and management techniques (e.g., DKIM, SPF, DMARC)

References

CompTIA. *CompTIA A+ Certification Exam Core 1 Objectives*. [https://partners.comptia.org/docs/default-source/resources/comptia-a-220-1101-exam-objectives-\(3-0\)](https://partners.comptia.org/docs/default-source/resources/comptia-a-220-1101-exam-objectives-(3-0))

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