

NETWORK TECHNOLOGY

This exam tests knowledge of the fundamental concepts of data communications. Topics covered include: network architectures, topologies, media and devices, protocols, types of servers, and performance and security. 3 s.h. CMP-354-TE

This is a two-hour examination in which you must answer 100 multiple-choice questions worth 1 point each. A passing score is **70** out of 100 points. Test results are reported on a pass/fail basis only.

Here are the topics covered and their approximate importance on the test:

1. NETWORK CONCEPTS (20%)

- 1.1 Network components
- 1.2. Network device roles
- 1.3 Network models and software
- 1.4 LAN, MAN, WAN
- 1.5 Internet, intranet, extranet
- 1.6 Future trends of networking
- 1.7 Standards organizations
- 1.8 OSI model

2. NETWORK INFRASTRUCTURE (25%)

- 2.1 Network topologies
- 2.2 Physical and logical networks
- 2.3 Wireless network modes
- 2.4 Remote access and authentication
- 2.5 WAN connectivity techniques

3. PROTOCOLS (25%)

- 3.1 Fiber and copper media
- 3.2 Data link and network layer protocols
- 3.3 IEEE 802 standard
- 3.4 Network protocols
- 3.5 IP addresses
- 3.6 Host name resolution
- 3.7 TCP/IP utilities

4. COMMUNICATION SERVICES (15%)

- 4.1 Types of servers
- 4.2 Peer-to-peer and client servers
- 4.3 Directory services
- 4.4 Network services
- 4.5 Network operating systems

5. MONITORING AND PROTECTING THE NETWORK (15%)

- 5.1 Network reliability
- 5.2 Fault tolerance and redundancy
- 5.3 Network performance
- 5.4 Network security
- 5.5 Network attacks and malicious software
- 5.6 Firewalls, antivirus software, data encryption

A textbook to help you prepare:

Networking Basics. Patrick Ciccarelli et al. Current edition. Hoboken, NJ: John Wiley & Sons.

SAMPLE QUESTIONS

These questions are similar to ones you will find on the TECEP exam.

1. Which of the following are used in a traditional mainframe computer environment?
 - a. Servers
 - b. Smart terminals
 - c. Laptops
 - d. Dumb terminals

2. High-level protocols include all of the following EXCEPT
 - a. addressing
 - b. handshaking
 - c. establishing a connection
 - d. the physical process of connection

3. Which of the following is NOT a characteristic of a WAN?
 - a. They usually communicate at high speeds.
 - b. Access is limited.
 - c. They can cover a very large geographic area.
 - d. They can be used to interconnect two or more MANs.

4. Which of the following is an IEEE wireless networking standard?
 - a. 802.2
 - b. 802.3
 - c. 802.5
 - d. 802.11

5. Which of the following is the bottom layer of the OSI model?
 - a. Application
 - b. Physical
 - c. Data link
 - d. Session

6. Which of the following is basically a simple amplifier?
 - a. Repeater
 - b. Bridge
 - c. Router
 - d. Switch

7. Which of the following is most often seen in legacy networks such as an IBM host?
 - a. Logical topology
 - b. Logical bus
 - c. Mesh topology
 - d. Logical ring

8. Which of the following is the standard currently used for Wi-Fi?
 - a. 802.11a
 - b. 802.11b
 - c. 802.11g
 - d. 802.11n

9. Which of the following uses existing copper telephone lines to carry digital signals?
 - a. Ethernet
 - b. Token-ring
 - c. DSL
 - d. SONET

10. FDDI uses what kind of technology?
 - a. Coaxial cable
 - b. Fiber optic
 - c. Twisted-pair cable
 - d. Wireless

11. Which of the following is technically a multiport repeater for use with twisted-pair cable?
 - a. NICs
 - b. Bridges
 - c. Hubs
 - d. Routers

12. The _____, also called the digital signaling technique, indicates how information is represented as voltage levels or electrical current charges.
 - a. bipolar signaling
 - b. encoding method
 - c. double current signaling
 - d. data rate

13. All of the following protocols that are part of the IPX/SPX protocol suite operate at the Application, Presentation and Session layers of the OSI model EXCEPT
 - a. IPX
 - b. NCP
 - c. SAP
 - d. RIP

14. Each port is assigned a unique 16-bit number in which of the following ranges?
 - a. 0-255
 - b. 0-6,535
 - c. 0-65,535
 - d. Infinite range

15. Which of the following is NOT a host name resolution method?
- DNS
 - WINS
 - DHCP
 - HOSTS file
16. _____ is a protocol and application that provides remote terminal emulation services in clear text.
- FTP
 - UDP
 - TFTP
 - Telnet
17. All the following support a user-management feature that allows you to assign a separate user name and password for each individual EXCEPT
- Windows 98
 - Macintosh OS 9
 - Windows 2000
 - Linux
18. Client/server networks are more secure than
- firewalls
 - peer-to-peer networks
 - multiserver networks
 - member servers
19. NetWare supports access for
- Windows clients
 - Apple Macintosh
 - IBM OS/2
 - all of the above
20. _____ can have a serious adverse effect on a company's finances.
- Trap commands
 - Bottlenecks
 - Firefighting
 - Network downtime
21. A normal backup is also referred to as a(n)
- daily backup
 - full backup
 - differential backup
 - incremental backup
22. EtherPeek is an example of a
- performance monitoring program
 - remote management program
 - backup utility program
 - configuration management tool

23. Unauthorized access relates to which of the following?

- a. Confidentiality and availability
- b. Confidentiality and integrity
- c. Integrity and availability
- d. Confidentiality and reliability

24. The Sony BMG Copy Protection scandal involved

- a. Rootkit
- b. Adware
- c. Spyware
- d. Worm

25. _____ is the process of decoding encrypted data.

- a. Root
- b. Signature
- c. Security breach
- d. Decryption

ANSWERS TO SAMPLE QUESTIONS

1. **d** 2. **d** 3. **a** 4. **d** 5. **b**

6. **a** 7. **d** 8. **c** 9. **c** 10. **b**

11. **c** 12. **b** 13. **a** 14. **c** 15. **c**

16. **d** 17. **a** 18. **b** 19. **d** 20. **d**

21. **b** 22. **a** 23. **b** 24. **a** 25. **d**