

CMU-CS 252

Introduction to Network & Telecommunications Technology

Part I: Multiple Choice

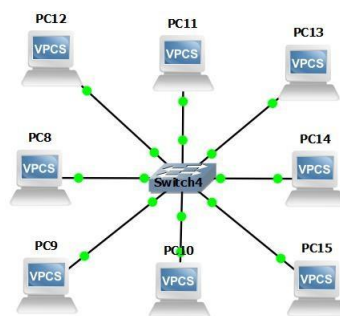
1. (0.2 point)

Which layer of the OSI model is responsible for data encryption?

- A. Presentation
- B. Session
- C. Network
- D. Data Link

2. (0.2 point)

You have been hired by a company that uses a topology shown below. In looking at the physical layout of your network, which of the following types of topologies is being used?



- A. Bus
- B. Star
- C. Mesh
- D. Ring

3. (0.2 point)

You are designing a 1000Base-T network. In creating this network, what distance limitation will you be facing when installing the cabling?

- A. 100 m
- B. 185 m
- C. 500 m
- D. 2 km

4. (0.2 point)

Which service listed below is used to resolve IP addresses and domain names?

- A. DNS
- B. DHCP

C. ARP

D. TCP

5. (0.2 point)

Identify the class of IP Address for the following IP address 114.101.101.101?

A. Class A

B. Class B

C. Class C

D. Class D

6. (0.2 point)

Which example is a network adapter loopback address?

A. 255.0.0.1

B. 192.0.0.1

C. 127.10.20.30

D. 10.0.0.1

7. (0.2 point)

Which example below is the default subnet mask of Class B (IP Version 4)?

A. 255.255.255.224

B. 255.255.255.0

C. 255.255.0.0

D. 255.0.0.0

8. (0.2 point)

Your network has 10 computers that are networked together using a star topology. Which of the following is a possible point of failure for this topology, which could bring down the entire network?

A. Cable

B. Network card

C. T-Connector

D. Hub

9. (0.2 point)

The network layer protocol of the internet is:

A. ethernet

B. internet protocol

C. hypertext transfer protocol

D. user datagram protocol

10. (0.2 point)

You are the network administrator of a 10BaseT network. On the weekend, when a few people are working, you run 110 m of cable to a new server that is being used as a file server. The cable is installed in a new section of the building, where no cabling currently exists. When you attempt to access files on the server, they are experiencing errors and corrupt data. Which of the following is most likely the cause of this problem?

- A. Bandwidth
- B. Attenuation
- C. Crosstalk from a neighboring cable
- D. CSMA/CD issues

11. (0.2 point)

You are designing a new network and are concerned about interference from other wires. Which of the following is most susceptible to transmission errors due to crosstalk?

- A. Coaxial
- B. UTP
- C. STP
- D. Fiber optic

12. (0.2 point)

You are designing a new network for a grocery store. Cabling will have to run along the ceiling, where there are a significant number of florescent lights. You are concerned about interference from these lights. Which of the following cable types could be used, which would not be susceptible to this type of interference?

- A. Coaxial
- B. UTP
- C. STP
- D. Fiber optic

13. (0.2 point)

A new technician for 123 Corp plans out the maximum length of a Gigabit Ethernet segment using MMF optic cable. What is the correct distance? (Choose only one)

- A. 100m
- B. 125m
- C. 550m
- D. 10km

14. (0.2 point)

For which type of connection should a straight-through cable be used?

- A. switch to switch
- B. switch to hub
- C. switch to router
- D. router to PC

15. (0.2 point)

What are the first 24 bits in a MAC address called?

- A. NIC
- B. BIA
- C. OUI
- D. VAI

16. (0.2 point)

Fast Ethernet has a data rate of _____Mbps.

- A. 10
- B. 100
- C. 1000
- D. 10000

17. (0.2 point)

IEEE has defined the specifications for a wireless LAN, called_____, which covers the physical and data link layers.

- A. IEEE 802.3
- B. IEEE 802.5
- C. IEEE 802.11
- D. IEEE 802.12

18. (0.2 point)

Which transmission media has the highest transmission speed in a network?

- A. coaxial cable
- B. twisted pair cable
- C. Optical fiber
- D. electrical cable

19. (0.2 point)

Which of these is not a guided medium?

- A. Fiber optical cable
- B. Coaxial cable
- C. Wireless LAN
- D. Copper wire

20. (0.2 point)

You are a network technician assigned to install a new network hub. Which layer of the OSI model does a standard hub operate at? Select only one answer.

- A. Physical layer
- B. Data link layer
- C. Network layer
- D. Transport layer

21. (0.2 point)

You are a network technician assigned to install a new NIC on a PC. Which layer of the OSI model does a NIC operate at?

- A. Physical layer
- B. Data link layer
- C. Network layer
- D. Transport layer

22. (0.2 point)

What is the unique physical address that is found on all NICs called?

- A. DNS address
- B. NAT address
- C. IP address
- D. MAC address

23. (0.2 point)

From the list of choices, which of the following media access methods is used for an IEEE 802.5 network?

- A. Direct Sequence
- B. Token passing
- C. CSMA/CD
- D. CSMA/CA

24. (0.2 point)

POP3 is identified by which TCP/IP port number?

- A. UDP Port 21
- B. TCP Port 23
- C. UDP Port 25
- D. TCP Port 110

25. (0.2 point)

You are a network administrator looking to implement technology into a company. You are told you need to build a network using the IEEE 802.11 standard. From the list below, the IEEE 802.11 standard maps to which of the following? Select only one answer.

- A. Token Ring
- B. Wired Ethernet
- C. Metropolitan Area Network (MAN)
- D. Wireless in Infrastructure mode

26. (0.2 point)

When a host transmits data across a network to another host, which process does the data go through?

- A. standardization
- B. conversion
- C. encapsulation
- D. synchronization

27. (0.2 point)

Two sub-layers of the OSI Data Link layer are which of the following?

- A. Logical Link Control, Data Link Control
- B. Media Access Control, Physical Layer Control
- C. Logical Link Control, Media Access Control
- D. Data Link Control, Physical Layer Control

28. (0.2 point)

The network layer concerns with

- A. bits
- B. frames
- C. packets
- D. segment

29. (0.2 point)

Which one of the following is NOT a function of the network layer?

- A. routing
- B. inter-networking
- C. Congestion control
- D. best path

30. (0.2 point)

Your company uses UTP cable for all of its network connections including workstations and servers. The users have reported problems connecting to one of the most important servers on the network and you have been called in to look at it, due to a possible physical security breach by a former employee. While examining the server, you find that a small battery-powered motor has been placed and is running next to the server's network connection. What is causing the network problem?

- A. Electromagnetic interference
- B. Static electricity
- C. Transceivers
- D. Unknown, but the motor is probably unrelated

31. (0.2 point)

Your network uses vampire taps and AUI connectors to access data from the network cable. Which of the following cabling types is being used?

- A. Thinnet
- B. Thicknet
- C. STP
- D. Fiber optic

32. (0.2 point)

You are designing a 10Base2 network. In creating this network, what distance limitation will you be facing when installing the cabling?

- A. 100m
- B. 185m
- C. 200m
- D. 2km

33. (0.2 point)

Your network uses 100BaseFX so that data can be transferred at higher speeds and up to distances of 400 m. During transmission, data can travel in both directions, but only in one direction at a given time. Which of the following transmission methods is used?

- A. Simplex
- B. FireWire
- C. Half-Duplex
- D. Full Duplex

34. (0.2 point)

You are the network engineer assigned to implement a new 100 Mbps network connection. You need to select the correct cabling, as well as the correct standard. From the selections below, choose which 100 Mbps networking standard makes use of only two pairs of a Category 5 UTP cable.

- A. 10BaseT
- B. 100BaseFL
- C. 100BaseTX
- D. 100BroadT4

35. (0.2 point)

_____uses thick coaxial cable.

- A. 10Base5
- B. 10Base2
- C. 10BaseT
- D. 10BaseF

36. (0.2 point)

Gigabit Ethernet has a data rate of _____Mbps.

- A. 10
- B. 100
- C. 1000
- D. 10000

37. (0.2 point)

In IEEE 802.11, the access method used in the DCF sub-layer is_____

- A. ALOHA
- B. CSMA/CD
- C. CSMA/CA
- D. Token Passing

38. (0.2 point)

A Bluetooth network is called a_____

- A. piconet
- B. scatternet
- C. bluenet
- D. none of the above

39. (0.2 point)

Which OSI model layer is responsible for frame sequencing?

- A. The physical layer
- B. The transport layer
- C. The data link layer
- D. The application layer

40. (0.2 point)

You are a network technician assigned to install a new network switch. Which layer of the OSI model does a standard switch (or bridge) operate at? Select only one answer.

- A. Physical layer
- B. Data link layer
- C. Network layer
- D. Transport layer

41. (0.2 point)

You are a network technician assigned to install a new network Router. Which layer of the OSI model does a standard router operate at?

- A. Physical layer
- B. Data link layer
- C. Network layer
- D. Transport layer

42. (0.2 point)

Which of the following is a valid MAC address?

- A. 00:05:J6:0D:91:K1
- B. 10.0.0.1-255.255.255.0
- C. 00:05:J6:0D:91:B1
- D. 00:D0:A0:5C:C1:B5

43. (0.2 point)

You are the system administrator for a small company that runs two Windows servers (Windows Server 2016) and two Linux servers (SUSE Linux). You need to lock down the connections to the switch via port security; this essentially means you will need to retrieve the MAC addresses on the systems. MAC addresses are found on the Linux server by issuing which command?

- A. ipconfig /a
- B. ifconfig /a
- C. winipcfg /a
- D. ifconfig -a

44. (0.2 point)

Standards for CSMA/CD are specified by which IEEE 802 sublayer?

- A. 802.1
- B. 802.3
- C. 802.4
- D. 802.5

45. (0.2 point)

From the choices listed, which of the following protocols represents e-mail protocols?

- A. POP3
- B. SMCP
- C. IMAP5
- D. Telnet

46. (0.2 point)

When discussing the OSI model and the TCP/IP model, which layer of the OSI model handles what you would find in the Application layer of the TCP/IP model?

- A. Application, Presentation, and Session
- B. Presentation, Session, and Transport
- C. Network, Data Link, and Physical
- D. Session, Transport, and Network

46. (0.2 point)

Match the following:

- ~A. Repeaters ~1. Data Link Layer
- ~B. Bridges ~2. Network Layer
- ~C. Routers ~3. Physical Layer

- A. ~ A vs 2; B vs 3, C vs 1
- B. ~A vs 3; B vs 1; C vs 2
- C. ~A vs 3; B vs 2; C vs 1
- D. ~A vs 1; B vs 2; C vs 3

47. (0.2 point)

The center connection point of a star network is a _____

- A. Repeater
- B. Bridge
- C. Router
- D. Switch/Hub

47. (0.2 point)

A two-way nonsimultaneous connection is an example of _____

- A. Simplex
- B. Half Duplex
- C. Full Duplex

D. Multiplexing

48. (0.2 point)

Does a typical star topology use which type of media to connect between nodes and the center connection point (switch/hub)?

A. FDDI

B. Coaxial Cable

C. Fiber optic

D. UTP – CAT 5

49. (0.2 point)

Which device is the best choice for routing?

A. Router

B. Gateway

C. Hub

D. Switch

50. (0.2 point)

Which service listed below is used for dynamic IP address allocation?

A. DNS

B. DHCP

C. ARP

D. TCP

