Basic Enterprise Network Architectures

1. (Multiple Choice) Which of the following network topologies are the widely used backbone network topologies? (Select 2 Answers)

A.Full Mesh

B.Plane Hierarchical structure

C.Plane and Space Hierarchical structure

D.Multi-homing structure

2. (Multiple Choice) The metropolitan area network which is located between backbone network and access network consists of ( ). (Select 3 Answers)

A.Carrier layer

B.Core layer

C.Convergence layer

D.Access layer

3. (Single Choice) In a complete IP network, which of the following networks does a Layer 2 network under the service access control point belong to?

A.Backbone network

B.Metropolitan area network (MAN)

C.Access network

D.Core network

4. (Multiple Choice) When a backbone network uses dual planes, which of the following statements are true? (Select 2 Answers)

A.When a fault occurs on one plane, the other plane cannot function as the backup of the faulty plane.

B.The two planes generally carry different services.

C.In normal situations, the services on the two planes do not affect each other.

D.Compared with a dual-plane structure, a hierarchical plane is more reliable.

Enterprise Network Constructs

1. (Single Choice) Keyboard is used to input data only. Which of the following is the transmission mode of the keyboard?

A.Simplex mode

B.Half-duplex mode

C.Full-duplex mode

D.Auto negotiation

2. (Multiple Choice) Which of the following communication types are defined based on information interaction between the transmitter and the receiver? (Select 3 Answers)

A.Simplex

B.Half-duplex

C.Duplex

D.Auto-negotiation

3. (Single Choice) Coaxial cables can be classified into different types by diameter. One of these types of the coaxial cables is suitable for relatively large LAN because it supports long distance and provides high reliability. Which of the following coaxial cables belongs to this type?

A.Coaxial cable with a large diameter

B.Coaxial cable with a small diameter

C.10-core coaxial cable

D.16-core coaxial cable

4. (Single Choice) A transmission medium consists of glass fibers and a shield layer. It is free from interference of magnetic signals and provides high-speed and long-distance transmission. But such a matter is very expensive. What is this matter?

A.Coaxial cable

B.Twisted pair cable

C.Optical fiber

D.Waveguide fiber

5. (Multiple Choice) Which device operates at physical layer?

A.Switch

B.Hub

C.Router

D.Firewall

6. (Multiple Choice) What are transmission media of physical layer? (Select 3 Answers)

A.Fiber

B.Twisted pair cable

C.Radio wave

D.Ethernet

7. (Multiple Choice) What are wiring standards for physical layer related to LAN? (Select 3 Answers)

A.100Base-T

B. HDLC

C.100Base-FX

D.1000Base-SX/LX

8. (Multiple Choice) Which of the following are physical interfaces? (Select 4 Answers)

A.Dialer interface

B.Voice interface

C.Serial interface

D.Sub interface

E.CE1/PRI interface

F. Virtual interface template

G.. ISDN BRI interface

9. (Single Choice) Which of the following fibers allows for multiangular incidence of “multiple” beams of light for transmission?

A.4-core fiber

B.“Single”-mode fiber

C.Multimode fiber

D.Active fiber

10. (Single Choice) To improve a twisted pair cable's capability to withstand magnetic interference, which of the following layers can be added as a shield layer of the twisted pair cable?

A.STP

B.UTP

C.BTP

D.RPR

11. (Single Choice) Both analog transmission and digital transmission can use twisted pair cables. Which of the following statement is true?

A.The communication distance increases with the diameter of the conductor.

B.The communication distance decreases with the diameter of the conductor.

C.The communication distance is independent of the diameter of the conductor.

D.The communication distance increases with the diameter of the conductor when the communication distance exceeds 50 km.

12. (Single Choice) In Ethernet standard, which of the following mechanisms is used to avoid collision when different nodes transmit packets simultaneously?

A.CSMA/CA

B.CSMA/DA

C.CSMA/CD

D.CSMA/AC

13. (Single Choice) The distance limit of category 5 UTP wiring is ( ).

A.100 meters

B.200 meters

C.50 meters

D.185 meters

14. (Single Choice) Two computers are connected to each other by using twisted pair cable. The correct wiring sequence is ( ).

A.Computers can not be directly connected with twisted pair cable

B.1--1, 2--2, 3--3, 4--4, 5--5, 6--6, 7--7, 8--8

C.1--3, 2--6, 3--1, 4--4, 5--5, 6--2, 7--7, 8--8

D.1--2, 2--1, 3--6, 4--4, 5--5, 6--3, 7--7, 8-8

15. (Single Choice) A PC is connected to router's Ethernet port through its network interface card. What type of cable should be used to connect these two interfaces?

A.Cross cable

B.Straight cable

C.Console cable

D.Backup cable

16. (Single Choice) How long can a fast Ethernet cable 100BaseTX or 100BaseT4 transmit a signal?

A.100m

B.550m

C.1000m

D.2000m

17. (Single Choice) How long can a Gigabit Ethernet cable 1000BaseT transmit a signal?

A.100m

B.550m

C.1000m

D.2000m

18. (Multiple Choice) Which transmission rates does an Ethernet allow for? (Select 3 Answers)

A.10M

B.100M

C.1000M

D.155M

19. (Single Choice) After receiving a data frame from any port, a hub forwards it to any other port.

T.True

F.False

20. (Single Choice) Which communication mode does a hub work in?

A.Simplex

B.Half-duplex

C.Full-duplex mode

D.Auto-negotiation

21. (Single Choice) Which type of Ethernet uses hubs?

A.Star Ethernet

B.Shared Ethernet

C.Switched Ethernet

D.Token ring Ethernet

22. (Multiple Choice) The physical medium used by Ethernet include ( ). (Select 3 Answers)

A.Coaxial cable

B.Twisted pair cable

C.Optical fiber

D.V.35 cable

23. (Single Choice) multiple PCs are connected to the same hub through twisted pair cables. What's its logical topology structure?

A.Star

B.Tree

C.Mesh

D.Ring

E.Bus

24. (Single Choice) Under Which of the following circumstances, “multiple” work stations belong to the same collision domain?

A.“multiple” workstations are connected to a hub through twisted pair cables

B.“multiple” workstations are connected to a LAN switch through twisted pair cables

C.“multiple” workstations are connected to a router through twisted pair cables

D.“multiple” workstations are connected to a bridge through twisted pair cables

25. (Multiple Choice) In late 1980s, UTP appeared and was widely used. Which of the following are advantages of UTP? (Select 3 Answers)

A.Low price

B.Easy to manufacture

C.Receive and transmit using different wires

D.Both of the physical and logical topology is bus type

26. (Single Choice) How to eliminate the collision in Ethernet?

A.Increase the length of cable

B.Decrease the number of transmitted packets

C.Decrease the number of users on each network segment

D.Replace the hub and repeater with switch or bridge

27. (Single Choice) Which of the following statements regarding collision is incorrect?

A.Each ports of switch is an independent collision domain.

B.The collision that happens in the network connected with one port of a switch will affect another network connected with another port of the switch.

C.The number of the collision domains will be increased if the hub in the network is replaced with the bridge.

D.Reduce the number of hosts in a network can decrease probability of collision.

28. (Multiple Choice) What kind of wirings does 100BaseT4 Fast Ethernet specification use? (Select 3 Answers)

A.Category 3 UTP

B.Category 4 UTP

C.Category 5 UTP

D.Category 6 UTP

29. (Single Choice) An Ethernet electrical port can work in three types of duplex modes, whereas an Ethernet optical port can work in only one mode. Which of the following represents this mode?

A.Full-duplex

B.Half-duplex

C.Auto-negotiation

D.Simplex

30. (Single Choice) Which layer implements auto-negotiation in an Ethernet without using private datagrams?

A.Application Layer

B.Network Layer

C.Data Link Layer

D.Chips at Physical Layer

Ethernet Framing

Multiple Choice) A complete data communication system includes ( )

A.Sender

B.Receiver

C.Harddisk

D.Message

E.Protocol

2. (Single Choice) The ( ) is the physical path along which a message passes.

A.Sender

B.Receiver

C.Harddisk

D.Message

E.Protocol

3. (Multiple Choice) Network topology type includes: (Select 4 Answers)

A.Bus

B.Star

C.Tree

D.Peer-to-peer

E.Mesh

4. (Single Choice) Which of the following network topologies has the highest reliability?

A.Bus

B.Star

C.Ring

D.Mesh

5. (Multiple Choice) According to the scope of the geographical area,network type includes? (Select 2 Answers)

A.Campus network

B.LAN

C.WAN

D.Enterprise network

6. (Single Choice) Which organizations drafts RFC (Request for Comments)?

A.IEEE

B.ITU-T

C.IETF

D.ISO

7. (Single Choice) Which of the following standard organizations has defined the protocol for LAN such as 802 series protocols?

A.IEEE

B.ITU-T

C.IETF

D.ETSI

8. (Single Choice) Which network topology has risk of whole network failure when a link is broken?

A.Mesh

B.Bus

C.Star

D.Tree

9. (Multiple Choice) Which of the following network topologies consist of redundant links between any two nodes? (Select 2 Answers)

A.Mesh

B.Star

C.Tree

D.Bus

E.Ring

10. (Single Choice) In data communications, the data format must be determined and agreed by the information creator and the information receiver before the data is transmitted.

T. True

F. False

11. (Multiple Choice) The most significant feature of a local area network (LAN) is that the LAN is intended for only one organization and is geographically limited, allowing interconnections of a limited number of stations. Which of the following transmission media are most common to a LAN? (Select 3 Answers)

A.Fiber

B.Coaxial cable

C.Twisted pair cable

D.ADSL

12. (Multiple Choice) The OSI reference model defines a simple hierarchical network model for a computer network. Which of the following standardization organizations develops the OSI reference model?

A.ISO

B.IEEE

C.ITU

D.IETF

13. (Single Choice) A network provides data communication services for a relatively large geographical area and is mainly used to interconnect LANs. Which network type does this network belong to?

A.Large LAN

B.Wide area network (WAN)

C.Metropolitan area network (MAN)

D.Backbone network

14. (Single Choice) The bus and star topologies, which are frequently used in a LAN, refer to the physical connection types rather than the logical structure of the network.

T.True

F.False

15. (Single Choice) When a node transmits data over a network medium, the data is transmitted to all the nodes on the network. Which topology does this network use?

A.Star

B.Bus

C.Tree

D.Ring

16. (Single Choice) A topological structure has a central control point to enable easy network design and equipment installation. The network media connect to the area where workstations reside through the hub or switch at the central control point. The disadvantage of such a structure is

that a fault on the hub or switch results in a “single”-point fault. Which topology does this type of LAN usually use?

A.Star

B.Bus

C.Tree

D.Ring

17. (Multiple Choice) As a device for converting signals between an edge system and a communications system, a modem is essential in a WAN. A modem is connected to a serial port on a router. Which two of the following transmission modes does the serial port work in? (Select 2 Answers)

A.Synchronous

B.Asynchronous

C.Switching

D.Routing

18. (Single Choice) Which of the following statements is incorrect regarding LAN features?

A.High transmission efficiency and high reliability

B.The structure is simple and easy to be constructed.

C.Extensive coverage

D.Large coverage scale

19. (Single Choice) In OSI reference model, OSI stands for ( ).

A.Organization Standard Institute

B.Organization Standard Interconnection

C.Open System Internet

D.Open System Interconnection

20. (Single Choice) How many layers are included in OSI reference model?

A.3

B.5

C.6

D.7

21. (Single Choice) According to OSI reference model, when a packet is transmitted from upper layer to lower layer, the header will be ( )

A.Added

B.Removed

C.Rearranged

D.Modified

22. (Single Choice) In OSI reference model, Transport Layer is located at layer ( ).

A.3

B.4

C.6

D.7

23. (Single Choice) In OSI reference model, which layer resides at the bottom?

A.Data link layer

B.Application layer

C.Physical layer

D.Network layer

24. (Multiple Choice) According to OSI reference model, which layer defines mechanical, electrical, functional and procedural functions to realize data transmission?

A.Transport layer

B.Data link layer

C.Network layer

D.Physical layer

25. (Single Choice) The PDU (Protocol Data Unit) that resides at physical layer is called ( )

A.Frame

B.Packet

C.Segment

D.Binary bit flow

26. (Single Choice) The PDU (Protocol Data Unit) that resides at data link layer is called ( ).

A.Binary bit flow

B.Frame

C.Packet

D.Segment

27. (Multiple Choice) Which of the following protocols reside at data link layer? (Select 3 Answers)

A.PPP

B.HDLC

C.IP

D.IEEE 802.3

28. (Multiple Choice) Data link layer has two sub-layers, they are ( ) (Select 2 Answers)

A.PVC sub-layer

B.MAC sub-layer

C.LLC sub-layer

D.VC sub-layer

29. (Multiple Choice) Which of the following devices operate at data link layer? (Select 2 Answers)

A.Hub

B.Bridge

C.Switch

D.Router

E.Firewall

30. (Single Choice) Which of the following is the broadcast MAC address?

A.FF-FF-FF-FF

B.FF-FF-FF-FF-FF-FF

C.00-00-00-00-00-00

D.00-00-00-FF-FF-FF

31. (Multiple Choice) Which of the following protocols are related to WAN? (Select 2 Answers)

A.Ethernet

B.PPP

C.HDLC

D.UDP

32. (Single Choice) According to OSI reference model, router operates at ( )

A.Physical layer

B.Data link layer

C.Network layer

D.Application layer

33. (Single Choice) The protocol data unit that resides at network layer is called ( ).

A.Segment

B.Packet

C.Bit

D.Frame

34. (Single Choice) According to OSI reference model, which of the following statements about the function of network layer is correct?

A.Ensure the correctness of data transmission

B.Control the forwarding and routing of data packet

C.Control transmission of bit flow

D.Error correction and flow control

35. (Single Choice) The OSI reference model contains seven layers in two groups, namely, upper layer and lower layer. The upper layer starts from ( ) to Layer 7 and is also called host layer.

A.Layer 2

B.Layer 3

C.Layer 4

D.Layer 5

36. (Single Choice) The upper layer of the OSI reference model ensures that data is transmitted properly. Which of the following at the upper layer is used to ensure this?

A.Hardware

B.Software

C.Both hardware and software

D.Either software or hardware

37. (Single Choice) In the OSI reference model, one layer is used to establish end-to-end connections between hosts and checks for bit errors before data is transmitted or retransmitted. Which of the following layers stands for this layer?

A.Data Link Layer

B.Physical Layer

C.Network Layer

D.Transport Layer

38. (Single Choice) In the OSI reference model, one layer defines the format of data to be sent to the Application Layer in addition to providing data encryption, data encoding, and data conversion. Which of the following layers stands for this layer?

A.Presentation Layer

B.Session Layer

C.Network Layer

D.Application Layer

39. (Single Choice) In the OSI reference model, one layer converts bits into bytes and then into frames in addition to providing medium access. Which of the following layers stands for this layer?

A.Data Link Layer

B.Session Layer

C.Network Layer

D.Application Layer

40. (Single Choice) In the OSI reference model, one layer transmits bit streams between devices. Which of the following layers stands for this layer?

A.Data Link Layer

B.Physical Layer

C.Network Layer

D.Application Layer

41. (Multiple Choice) Which of the protocols are commonly used at the Data Link Layer of a WAN? (Select 2 Answers)

A.802.2

B.802.4

C.HDLC

D.PPP

42. (Multiple Choice) Which layers in OSI reference model belong to upper layer, also called as host layer and are responsible for data transmission and providing interface for user? (Select 3 Answers)

A.Data link layer

B.Network layer

C.Transport layer

D.Session layer

E.Presentation layer

F. Application layer

43. (Multiple Choice) According to OSI reference model, which of the following presents the correct layer sequence if packet goes from the bottom of the protocol stack to the top?

A.Physical, Data link, Network, Transport, Session, Presentation, Application

B.Physical, Data link, Network, Transport, Presentation, Session, Application

C.Physical, Transport, Data link, Network, Presentation, Session, Application

D.Physical, Data link, Transport, Presentation, Network, Session, Application

44. (Multiple Choice) Which of the following are functions of data link layer? (Select 4 Answers)

A.Physical address definition

B.Network topology discovery

C.Routing

D.Physical medium access

E.Error checking

45. (Multiple Choice) Which of the following are the advantages of OSI reference model? (Select 3 Answers)

A.Divide the complex network into simple components

B.Make it impossible for network engineers to concentrate on design and development of module functions

C.Define standard interface to realize compatibility for different manufacturers

D.Divide complicated network problem into simple problems to make it easier for learning and operation

46. (Multiple Choice) Which of the following devices have functions of all seven layers of OSI reference model? (Select 2 Answers)

A.Router

B.Email Server

C.Layer three switch

D.Network management server

47. (Multiple Choice) According to TCP/IP reference model, which of the following application layer protocols are based on TCP? (Select 3 Answers)

A.HTTP

B.TFTP

C.FTP

D.SMTP

E.SNMP

48. (Single Choice) A MAC address has ( ) bits.

A.6

B.12

C.24

D.48

49. (Single Choice) MAC address consists of two parts: provider number and serial number. The first 24 bits of MAC address represents provider number, which of the following is the provider number of Huawei?

A.00e0fc

B.0010fe

C.000001

D.0003cf

50. (Single Choice) Hub work at ( ) layer.

A.Physical

B.Data link

C.Network

D.Application

51. (Single Choice) According to OSI reference model, switch operates at ( ) layer.

A.Physical

B.Data link

C.Transport

D.Application

52. (Single Choice) A switch receives entire data frame and then perform CRC checking,the frame is forwarded unless CRC checking fails. The switch mode for this switch is ?

A.Cut-Through

B.Store-and-Forward

C.Fragment-free

D.Store-free

53. (Multiple Choice) Which of the following are advantages of layer 2 switch compared with hub? (Select 3 Answers)

A.Increase the collision

B.Higher throughput

C.Higher port density

D.Isolate collision domains

54. (Single Choice) ( ) combines “multiple” ports to form an aggregation group. It can be used to balance the traffic among member ports and improve the connection reliability.

A.Port Aggregation

B.Port binding

C.Port load balance

D.Port group

55. (Multiple Choice) The data forwarding of the switch is based on ( ).

A.Source MAC address

B.Destination MAC address

C.Source IP address

D.Destination IP address

56. (Multiple Choice) What describe the working principles of Ethernet Switches? (Select 3 Answers)

A.Receive all the data frames in the network segment

B.Generate MAC address table according to the source MAC address of the received frame

C.Layer 3 packet forwarding

D.Maintain MAC address table with aging mechanism

57. (Single Choice) IEEE 802.3 frame contains ( ) bits of DSAP field. It is used to indicate the upper layer protocols that are used.

A.8

B.4

C.16

D.24

58. (Single Choice) The last field of Ethernet frame is FCS (Frame Check Sequence). Its length is ( ) bytes.

A.2

B.4

C.8

D.32

59. (Multiple Choice) Which of the following statements about switching modes of LAN switch are true? (Select 2 Answers)

A.Store-and-forward switching mode does not check for error frames.

B.Cut-through switching mode forwards a frame after it received the first 64 octets of the frame.

C.Fragment-free switching mode can check for error frames in the first 64 octets of the frame.

D.Store-and-forward switching mode discards the frame with length less than 64 octets.

60. (Multiple Choice) Port mirroring means to get a copy of the data and then send it to the monitoring device for data analysis and diagnosis. Port mirroring can be divided into ( ). (Select 2 Answers)

A.Port based mirroring

B.Application based mirroring

C.Flow based mirroring

D.Upper layer protocol based mirroring

61. (Single Choice) A MAC address consists of 48 bits and is generally expressed in 12-bit dotted decimal notation. What kind of address does a MAC address consisting of all 1s stand for?

A.Multicast address

B.Broadcast address

C.Unicast address

D.Virtual address

62. (Single Choice) Which of the following together with the MAC address of a general L2 switch determines the MAC address table of the L2 switch?

A.RARP table

B.Transmission medium

C.Port

D.ARP table

63. (Single Choice) An L2 switch checks the MAC address forwarding table before it forwards a packet. How does the L2 switch forward a packet that contains an address not listed in the MAC address forwarding table?

A.Multicast

B.Broadcast

C.Unicast

D.Searching for routes

64. (Single Choice) The data field of standard Ethernet frame is ( ) bytes.

A.40-1500

B.46-1500

C.64-1500

D.64-1518

65. (Single Choice) Which of the following commands can be used to set Ethernet port so that buffer will not overflow when congestion occurs?

A.Flow on

B.Flow-control

C.Flow control

D.Enable flow-control

66. (Multiple Choice) When congestion occurs on port working in full duplex mode, switch will send "PAUSE" frame to the source to notify the source temporarily stop sending message for a short while. Which of the following circumstances can use the "PAUSE" method for flow control? (Select 3 Answers)

A.A pair of terminals

B.A switch and a terminal

C.Congestion that occurs on a stable network

D.The link between two switches

E.End to end flow control

67. (Single Choice) In a destination MAC address, which bit of the address determines whether a frame is sent to a “single” station or a group of stations?

A.7

B.8

C.9

D.10

68. (Single Choice) Regardless of multicast or unicast, an L2 switch establishes its MAC address table entries by means of MAC address learning.

T.True

F.False