

Advanced Level
Information and Communication Technology

Time

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Year

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1. Choose the answer that corresponds to the top three components of data communication.
 1. Transmission medium , Data source or sender, Data receiver
 2. Data source or sender, Transmission medium, Data receiver
 3. Data receiver, Data sender , Telephone line
 4. Data sender, Telephone line, Data receiver
 5. Data receiver, Telephone line, Data sender
2. Select the most appropriate statement regarding server- client computer network
 1. Among the computers joined to the network, using one computer as the main computer and it facilitates the other computers connected to the network.
 2. Selecting one computer as the main computer and others connected directly to it.
 3. Several computers were connected through the Hub / switch
 4. An instance where a user is connected to the Internet
 5. None of above
3. Select the statement that accurately specifies a simplex transmission
 1. Broadcasting programs on radio or television
 2. Receiving a message from a mobile phone
 3. Drive only one vehicle on a single lane, in an one-way road
 4. Transmit data via a hub connected to a computer network
 5. Transmitting data within the computer memory and processor through data bus
4. Select the most accurate statement about the Serial transmission of data over a computer network
 1. Transmitting large amount of data through a medium with in one second.
 2. During data transmission, transmitting of few bits at a time relevant to the particular transmission.
 3. Transmitting 8 bits at a time through the transmission media.
 4. During data transmission, Transmitting of one bit at a time and one after the other is called as a serial transmission.
 5. None of the above.
5. RJ45 connector is used for which of the following cables?
 1. Coaxial Cables
 2. Fiber Optics
 3. Twister Pair
 4. Coaxial Cables and Fiber optics
 5. Fiber optics and Twister Pair
6. The protocol used to bring a web page saved in web server in to a client's computer via a web browser is
 1. HTTP
 2. FTP
 3. DHCP
 4. DNS
 5. SMTP
6. SMTP protocol is used to
 1. Carry email messages
 2. Set up email addresses
 3. Carry an existing page in a web server to the client computer
 4. Safely carry information on a web page through the network
 5. None of the above
7. What is the service offered by DHCP in a network?
 1. Provide dynamic IP addresses to computers that connect to the network.
 2. Provide unique IP address to each computer on a network to identify specifically.
 3. Provide information to uniquely identify the computers that are connected to the computer network.
 4. To obtain information related to the server computer.
 5. All above

8. Saman has a file containing confidential information. That file should be given to his friend. His friend is already at overseas and what's the best way to send this confidential file to him?
1. Tele Conferencing
 2. Social Network
 2. Email
 3. Website
 3. Blog
9. Select the statement that correctly states the main service provided by the DNS to a client computer in a network
1. Provide an IP address to the each computer connected to the network.
 2. Provide access to data exchange between two users that using the network.
 3. When a domain name is given by a web browser, converting it to the relevant IP addresses.
 4. Providing domain names using their IP addresses.
 5. Web pages are moved between servers and client computers
10. Once you have built up a network that connects multiple computers, the command can be used to verify that data is correctly transmitted between the computers is
1. Ipconfig
 2. Ping
 3. ftp
 4. Tracert
 5. ICMP
11. The function of the protocol is to facilitate the downloading or uploading of a file over the Internet.
1. Ipconfig
 2. Ping
 3. ftp
 4. Tracert
 5. ICMP
12. Select the invalid Statement on Data Transmission
1. Data communication using physical media is called wireless data transmission.
 2. Twisted pair, coaxial cable and fiber optics are the types of cables used in wired data transmission.
 3. Fiber Optics is a very expensive cable and is only used in the main data transmission lines.
 4. Twisted-pair are very cheap and widely used in local area networks.
 5. Coaxial cables are used for television antennas.
13. Consider the following statements
- (a) Not causing a damage to the transmitted data as it's not interfered from external waves.
 - (b) It is a very fast transmission medium because light signals transmit data.
 - (c) Low cost.
- Which of the above statements about fiber optics is correct?
1. Only A
 2. Only B
 3. Only C
 4. A and B
 5. All
14. Which of the following command can be used to identify the ip address your computer has received while connected to the Internet?
1. Ping
 2. Ipconfig
 3. Netstart
 4. IPconfig/all
 5. Tracert
15. IP addresses are used to identify a computer on a network. Subnet Mask is very important in creating IP address. Select the correct statement on Subnet Mask
1. Subnet mask can exist as 256.0.0.0.
 2. Subnet mask cannot exist exceeding 255 number.
 3. The subnet mask values remain the same in each network.
 4. Subnet mask does not required in a local network.
 5. Subnet mask is only required for computers connected to the Internet.
16. What is expected by installing a DHCP on a computer network?
1. To identify the computers connected to a network separately.
 2. To store websites that refer to the Internet
 3. To dynamically assign IP addresses to the computers connecting to the network.
 4. For the purpose of converting IP addresses into Domain names.
 5. Not to deliver IP addresses dynamically to computers
17. Consider the following statements,
- (a) Radio waves
 - (b) Infrared
 - (c) Micro wave
 - (d) Fiber Optics

Which of the above are unguided transmission media?

1. A,B,C
2. B,C,D
3. A,B,D
4. A,D,C
5. ALL

18. Select the most accurate statement about Hub

1. Hub transmits data to every computer connected on the network.
2. Hub transmits data to a selected computer among all the computers connected to the network.
3. A Hub and a switch operates as same
4. A Hub is not a broadband device
5. Hub and switch cannot be used in a local area network

19. What is the server that is used to assign IP address dynamically?

1. DNS
2. DHCP
3. Webserver
4. Ping
5. Tracert

20. The protocol used to transfer a web page on a web server secure to the client computer is

1. HTTPS
2. DNS
3. FTP
4. SMTP
5. POP

21. Consider the following statements

- A. Using a firewall and password is a logical way of security that can be used to secure a network.
- B. Hardware firewall is applied by a hardware device while software firewall is applied by a software.
- C. Computer system security cannot be done by software.

Which of the above is correct about computer network security?

1. Only A
2. Only B
3. A and B
4. A and C
5. All

21. Which statement does not specify the functionality of the modem device

1. A modem does not convert digital data into analog data and analog data into digital data.
2. modem is a device that connects to a computer for Internet browsing.
3. There are two types of modems as internal and external.
4. A modem can be used to connect to the Internet from a personal computer.

5. In modern days, the dongle is used similar to the modem.

22. What is not considered as a device used to connect to a network?

1. Repeater
2. Hub
3. Switch
4. Modem
5. RAM

23. BNC Connector is used for which of the following cables?

1. Twisted Pair
2. Coaxial Cable
3. Fiber Optics
4. Twisted Pair and Coaxial Cables
5. Coaxial Cables and Fiber Optics

24. Select the correct answer for an instance where infrared rays are used

1. To transmit signals from domestic remote controller to the television.
2. To transmit the relevant wavelength when receiving telephone messages from a mobile phone
3. To transmit waves from a TV Broadcasting Station to the television
4. To transmit waves from a Radio Broadcasting station to the radio
5. Wired data transmission between a mobile phone and a computer

25. Select the Invalid statement about the Session layer

1. Maintain connectivity between the devices involved in the transmission of data.
2. Stop communication between relevant devices involved in the transmission of data.
3. Choose Simplex, half duplex or full duplex mode of transmission.
4. This is the fifth layer in the OSI model.
5. Identifying errors in the data transmitted.

26. Choose the correct order about the seven layers of Open Systems Interconnection (OSI).

1. Application layer, Presentation layer, Session layer, Transport layer, Network layer, Data link layer, Physical layer
2. Presentation layer, Application layer, Session layer, Transport layer, Network layer, Data link layer, Physical layer
3. Transport layer, Application layer, Presentation layer, Session layer, Network layer, Data link layer, Physical layer
4. Application layer, Presentation layer, Session layer, Transport layer, Network layer, Data link layer, Physical layer
5. Physical layer, Application layer, Presentation layer, Session layer, Transport layer, Network layer, Data link layer

27. Select the incorrect statement about the transport layer.

1. It's the 4th layer of the Open Systems Interconnection (OSI) model.
2. Control data flow between data forwarding and data receiving devices.
3. Multiplexing is another function of the transport layer
4. TCP/IP protocol is used here.
5. This layer builds the connection between the devices connected to the data transmission.

28. Select the Invalid Statement on Internet Protocol (TCP/IP) and Open Systems Interconnection (OSI)

1. Application layer of Transmission Control Protocol (TCP/IP) is a combination of Application layer, Presentation layer and Session layer of OSI.
2. There are seven layers in Open System Interconnection protocol, but there are only four layers in TCP/IP model.
3. The most commonly used model for the Internet is TCP/IP model.
4. Physical layer of TCP /IP model is made up of a combination of Data Link Layer and Physical Layer.
5. The Data Link Layer of OSI Model is also known as the Data Link Layer in TCP/IP model.

29. What is the role of DNS in a computer network?

1. Assign IP addresses
2. Convert Domain names and IP addresses
3. Protect the network from viruses
4. Provide directory for users
5. Connecting different networks together

30. According to the OSI layer references, the cables used for networking is belong to which of the following layers?

1. Physical layer
2. Network layer
3. Presentation layer
4. Transport layer
5. Session layer

31. Which of the following devices can be used to connect two similar computer networks?

1. Hub
2. Repeater
3. Bridge
4. Gateway
5. Modem

32. An organization has a subnet coverage of 255.255.255.192. The amount of subnet they can set up in this organization is

1. 24
2. 08
3. 07
4. 05
5. 04

33. An organization has a subnet coverage of 255.255.255.192. The number of computers (host) that can be connected to a subnet of this organization is

1. 64
2. 120
3. 14
4. 30
5. 62

34. According to the OSI layer references, which of the following ensures that data transmission is in simplex, half duplex or full duplex?

1. Physical layer
2. Network layer
3. Presentation layer
4. Transport layer
5. Session layer

35. As the data travels from one location to another, the wavelength of the receiver gradually decreases. In this case, which device is used to minimize the damage to data?

1. Repeater
2. Router
3. Hub
4. Switch
5. Bridge

36. Following are some statements about an IP address belonging to the class A
- Addresses of this class are used for large-scale computer networks.
 - Addresses belonging to this class range from 1 to 126 numbers.
 - 255.0.0.0 Can be used as the network cover number for this type of network.

Select the correct statement/statements

- Only A
- Only B
- A and B
- A and C
- All

37. What is an inaccurate statement about the IP address 127.0.0.1?
- This number is used to identify the computer that is being arranged as the server.
 - Software on the client computer can use these numbers to communicate with the server.
 - This number is called a loopback.
 - This number can be used for testing purposes when developing software that is intended to be networked.
 - This number is used to send a message to all computers connected to a network.

38. Choose the incorrect statement about the UDP protocol
- It is a protocol that initiate the secure communication without directly connecting the sender and receiver.
 - It is a protocol where the communication is initiated by directly connecting the sender and receiver.
 - Data packets that are lost during transmission are not redirected.
 - The UDP protocol was introduced by David P. Read
 - The UDP protocol does not guarantee that 100% of the data will be correctly received.

39. Choose the most accurate statement about ADSL
- It is a technology where, digital data transmit at a very low speed through telephone cables.
 - It is not possible to transmit a telephone message, a data packet and a video data at the same time.
 - It is capable of transmitting data at any distance from the main transmission center.
 - The download speed was less than the upload speed.
 - The download speed was higher than the upload speed.

40. The head of an organization wants to control the internet access to various websites when their employees are on duty. What is the technical strategy that can be used for this purpose?
- Advice on internet usage.
 - Awareness of what Web sites should be used.
 - Controlled by Proxy Server.
 - Controlled by DNS Server.
 - Allocating one computer to use the Internet.

41. Consider the following facts about amplitude modulation
- Amplitude modulation is performed by changing the wave amplitude.
 - This increases the amplitude of the wavelength at high voltage locations and reduces the amplitude of the wavelength at low voltage locations.
 - Amplitude modulation can be identified as a technology of digital data modulation.

Select the correct statements

- Only A
- Only B
- A and B
- A and C
- All

42. Select the answer that correctly stated the format of analog data transmission

1. Amplitude modulation, Frequency Modulation, Phase Modulation
2. Amplitude adjustment, Frequency adjustment, Phase adjustment
3. The transmitted data is received and forwarded to a router. Then using the addresses they are send to the receivables computers.
4. Modem is used for this purpose
5. None of the above.

43. An external person is trying to steal information of username and passwords used to log in to an information system. Which of the following threats it is included to?

1. Spooling
2. Elevation of privilege
3. Repudiation
4. Port Scan
5. Phishing

44. What is known as White Hat Hacker?

1. People who sneak into a network and steal their data.
2. People who can be deployed to check the security situation in a network.
3. People who can directly access to computers and steal data from those computers.
4. People who steal data from computers are marketing them.
5. People who help maintain a computer network.

45. A network that can be designed using only one hub/switch is?

1. Star
2. Bus
3. LAN
4. Ring
5. Tree

46. Which of the following Data Transmission medium use Light Waves?

1. Micro waves
2. Twisted pair
3. Infrared
4. Fiber optics
5. Radio waves

47. The work done by the Sessions Layer of OSI model is?

1. Data flow control
2. Translate data into various formats and encrypt.
3. Transmitting data by converting them to packets.
4. Error detection in data transmission.
5. Connecting the equipment used for transmission.

48. Consider the following statements regarding data and communication

- a. The Half-duplex method transmits data in one direction.
- b. Full duplex transmits data in both directions at the same time. Mobile phone is an example for this.
- c. Simplex method transmits data in one direction only, for example radio.

Which of the above statements are correct

1. OnOly A
2. Only B
3. B and C
4. A and C
5. ALL

49. Consider the following statements on Computer Network

- a. Fiber optics makes data transmission much faster.
- b. Optical fiber transmit data faster than twisted pairs and optical fiber is expensive.
- c. Optical fiber is not often used to connect computers, when building a local area network in an office.

Which of the above statements are correct

1. Only A
2. Only B
3. A and B
4. A and C
5. ALL

50. Select the correct statement from the following statements related to IP address

1. In an A grade address, first 16 bits are allocated for network bits.
2. In a B grade address, first 8 bits are allocated for network bits.
3. In a C grade address, first 24 bits are allocated for network bits.
4. In a D grade address, first 16 bits are allocated for network bits.

5. In an A grade address, first 24 bits are allocated for network bits.
50. IP address belongs to which of the following layer of OSI model
1. Application layer
 2. Transport layer
 3. Network layer
 4. Physical layer
 5. Session layer
51. Select the incorrect statement about IP Address and MAC number
1. IP number is assigned by software, but the MAC number is a fixed number.
 2. MAC number has two sections. One section is to identify the company and other section has a number of network.
 3. MAC number is included in a chip of the network card.
 4. Same MAC number cannot be existed for two computers.
 5. Same MAC number can be existed in many computers.
52. Which of the following layer control the data flow in OSI model
1. Application layer
 2. Session layer
 3. Physical layer
 4. Transport layer
 5. Network layer
53. Select the incorrect statement about IPV6
1. It can be identified as the IP of next generation
 2. Contain 128 bits
 3. Not the most widely used today
 4. The number of addresses that can be provided is huge (128^{th} power of 2)
 5. Contain 32 bits
54. Select the correct statement about IPV4
1. IP address contain 4 parts with 8 bits.
 2. This can be used to identify several computers that are connected to a network can in common.
 3. IP address can be divided into 3 classes.
 4. First 8 bits of an IP address indicate the host number.
 5. Ping command can be used to identify IP address of a computer.
55. Select the most appropriate statement about Pulse Code Modulation.
1. It is a method used to illustrate Analog Signal
 2. A method of converting digital data into analog data
 3. A method of converting analog data into digital data
 4. It is a method used for video editing
 5. It is a method used to illustrate sample analog signal into digital audio
56. Saman connected to the internet and browsed the web. The correct answer that shows the server and network involved in this process is,
1. Web server, DNS server
 2. Web server, DHCS server
 3. Web server, DNS server, DHCS server
 4. Web server, DNS server, Http server
 5. Web server, DNS server, Email server
57. Computers are frequently connected and removed to a local area network. According to the official who manages the network system of the company, he says giving the IP addresses to the computers in dynamic manner is easy. Which of the following response indicate the correct device or software that should be used
1. DNS server
 2. DHCP server
 3. SMTP
 4. FTP protocol
 5. Local server
58. Select the correct answer regarding the function done by the application layer of OSI model.
1. Provide software facilities to provide data and information required for a user to communicate.
 2. Separate the transmitted data into formats.
 3. Establish linkages between devices
 4. Troubleshooting
 5. Carrying out the transmission.
59. What is the answer that correctly shows the protocols used in Application layer of OSI model?
1. HTTP, HTTPS, FTP, RPC, UDP
 2. RPC, HTTP
 3. HTTP, TCP, UDP

4. HTTP, TCP, UDP, TELNET, SMTP, POP3, SNMP
5. HTTP, HTTPS, FTP, TELNET, SMTP, SNMP

60. Some of the Guided media used during data transmission are as follows. Which of these is the best medium for high speed and high capacity data transmission?

1. Twisted pair
2. Coaxial Cable
3. Fiber Optics
4. Unshield Twisted Pair
5. Shield Twisted Pair

61. A device that receives data from a transmission medium and segregates it and sends it to multiple devices or media is

1. Counter
2. Multiplexer
3. De-multiplexer
4. Flip-Flop
5. Router

62. Repeater belongs to which of the following layer of OSI model?

1. Application Layer
2. Physical Layer
3. Transport Layer
4. Data-Link Layer
5. Network Layer

63. Which of the following devices is best used to connect the local area network and the metropolitan area network?

1. Router
2. Bridge
3. Gateway
4. Switch
5. Hub

64. Which of the following protocol is used when it is needed to transmit an error message?

1. ICMP
2. HTTP
3. HTTPS
4. UDP
5. POP

65. What is wrong about MAC address?

1. A number that is included in the network card.
2. A MAC address allows a computer to independently distinguish over the other computers connected to the network.
3. Mac address has two sections and one section indicate a number that can be used to identify the manufacture company.
4. Extended form of MAC is Media Access Control
5. The Mac address is created only when a computer is connected to the Internet.

66. Consider the following statements,

- a. When transmitting data from transport layer Stop and wait flow control method is used.
- b. In the Stop and Wait method, Once the sender transmits a data and until the receiver acknowledge he received it further data transmission is stopped for a while.
- c. 'Stop and Wait' and 'Sliding Door Window' are two methods of controlling data flow.

From above statements, following are correct

1. Only A
2. Only B
3. C and A
4. A and B
5. ALL

67. Network coverage number of a C grade network is 255.255.255.224. How many computers can it connect to?

1. 8
2. 30
3. 6
4. 5
5. 25

68. In a C grade network there are 5 subnets and for one subnet minimum 16 computers can be connected. What is the subnet mask number such a C grade network can hold?

1. 255.255.255.0
2. 255.255.255.224
3. 255.255.255.192
4. 255.255.255.248
5. 255.255.255.64

79. How many subnets can be attached to the above address?

1. 6
2. 4
3. 16
4. 32
5. 48

80. The IP address above belongs to which network Grade?

1. A Class
2. B Class
3. C Class
4. D Class
5. E Class

81. When transmitting data over a network through signals those can be subjected to a destruction. What is the device used to restore these signals and prevent them from being destroyed?

1. Bridge
2. Switch
3. Repeater
4. Gateway
5. Modem

Use the following details to answer questions 94 to 98

83. Based on the above information, what is the maximum round trip time for a data packet?

1. 301 ms
2. 56 ms
3. 260 ms
4. 234 ms
5. 257 ms

84. What is the minimum round trip time for a data packet?

1. 301 ms
2. 56 ms
3. 260 ms
4. 234 ms
5. 257 ms

85. Based on the above output, what is the data packet loss percentage?

1. 4
2. 4%
3. 0%
4. 260 ms
5. 301%

86. What is the command that can be used to get

```
C:\>ping www.ict-help.com
```

```
Pinging ict-help.com [166.62.28.119] with 32 bytes of data:  
Reply from 166.62.28.119: bytes=32 time=301ms TTL=56  
Reply from 166.62.28.119: bytes=32 time=257ms TTL=56  
Reply from 166.62.28.119: bytes=32 time=248ms TTL=56  
Reply from 166.62.28.119: bytes=32 time=234ms TTL=56
```

```
Ping statistics for 166.62.28.119:
```

```
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
Approximate round trip times in milli-seconds:  
Minimum = 234ms, Maximum = 301ms, Average = 260ms
```

82. What is the IP address of the web server of which the website www.ict-help.com, used in the the above command is installed

1. 166.62.28.119
2. 166.62.29.119
3. 166.62.27.119
4. 166.62.20.20
5. 166.62.28.129

information about the routers connected between two computers in the event of data transmission?

1. Tracert
2. Ping
3. Netstart
4. Ipconfig
5. Chknet

87. Which of the following is not a valid subnet mask address?

1. 255.255.255.0
2. 255.255.255.192
3. 0.255.255.128
4. 255.255.255.248
5. 255.255.0.0

88. Which of the following is not a threat to a network?

1. Tempering
2. Repudiation
3. Denial of service
4. Phishing
5. Data supply

89. What is the correct answer with the protocols that apply to email messages?

1. SMTP, DHCP, POP3
2. SMTP, POP3, IMAP
3. SMTP, FTP, IMAP
4. HTTPS, FTP, IMAP
5. POP3, IMAP, DNS

90. X send an e-mail to Y. What is the protocol used to convey the email to server Y ?

1. HTTP
2. POP3
3. SMTP
4. HTTPS
5. IMAP

91. Bluetooth is a wireless data transmission medium. It is used in

1. Only in Local area Network
2. In Personal area network
3. In Metropolitan area network
4. Internet connections
5. Above all

92. What is Cryptography?

1. It is Data Encryption and Decryption Algorithm that is used to code data and transmit them without allowing external parties to access them.
2. Encrypted message.
3. Data Switching method
4. Packet switching and Data switching method
5. Data transmission using Message switching

93. Y is downloading a virus guard software from internet. Which of the following protocol is associated with that?

1. POP3
2. SMTP
3. FTP
4. HTTP
5. HTTPS

94. Consider the following statements,

- a. The multiplex method is used to make the best use of resources in a network.
- b. Multiplexing of digital data is done according to the time sharing method.
- c. Time sharing method can be used to move data from one computer to another using transmitting medium.

Choose the correct statement/s

1. Only A
2. Only B
3. A and B
4. A and C
5. All

95. What is the incorrect statement about 10 Base – T

1. 10 Base is a method of establishing cables in Ethernet
2. It is the amount of data transmitted per second
3. 10 represent the data transmission capacity. Therefore in here 10Mbps data is transmitted.
4. The maximum distance that data can be transmitted is between 90 m and 100 m.
5. 10 Base –T is a wireless data transmission medium.

96. In IPV6 edition, the total number of bits in an IP address is,

1. 32 bit
2. 64 bit
3. 128 bit
4. 256 bit
5. 8 bit

97. The approximate maximum distance that data can be transported through a UTP cable without connecting an intermediate device is

1. 90 – 100 m
2. 10 m
3. 50 – 60 m
4. 50 – 70 m
5. 200 m

98. Maximum number of hosts can be hold by a B grade computer network is

1. 65534
2. 254
3. 327666
4. 49140
5. 2016

99. 200.138.1.0 is the class C network creates subnets using 255.255.255.252 subnet mask. Select the maximum number of subnetworks available and the maximum number of hosts per subnet work, respectively.

1. Subnet 64, Host 2
2. Subnet 2, Host 64
3. Subnet 64, Host 4
4. Subnet 8, Host 64
5. Subnet 8, Host 30

100. A subnet having IP address of 192.168.0.1 and Subnet mask of 255.255.255.248, what is the suitable ip address for message transmission to all the host ?

- | | |
|------------------|----------------|
| 1. 255.255.255.0 | 2. 192.168.0.7 |
| 3. 192.168.0.0 | 4. 255.255.0.0 |
| 5. 192.168.0.1 | |