

Started on Monday, 18 December 2023, 4:25 PM

State Finished

Completed on Monday, 18 December 2023, 4:35 PM

Time taken 9 mins 8 secs

Question 1

Complete

Marked out of 1.00

Find out the invalid subnet mask from the following

- a. 223.0.0.0
- b. None of these
- c. 255.255.255.252
- d. 255.240.0.0

Question 2

Complete

Marked out of 1.00

Which of the following describe the process identifier that is used to run OSPF on a router?

- A. It is globally significant.
- B. It is locally significant.
- C. It is needed to identify a unique instance of an OSPF database.
- D. It is an optional parameter required only if multiple OSPF processes are running on the router.

Select one:

- B and C
- A and C
- A and D
- B and D

Question 3

Complete

Marked out of 1.00

Transmission data rate is decided by _____

- a. data link layer
- b. transport layer
- c. physical layer
- d. network layer

...

Question 4

Complete

Marked out of 1.00

Which of the following is not a limitation of IPV4 addresses?

- a. IPV4 fits for small topology drawing
- b. IPV4 lacks end-to-end connectivity
- c. IPV4 suffers from IP address depletion
- d. IPV4 cannot handle internet routing table expansion

Question 5

Complete

Marked out of 1.00

Dynamic Host Configuration Protocol is used for

- a. both IPV4 and IPV6
- b. None of these
- c. IPV6
- d. IPV4

Question 6

Complete

Marked out of 1.00

In reference to OSI model, TCP/IP model does not have _____

- a. session layer
- b. transport layer
- c. application layer
- d. application layer

...

Question 7

Complete

Marked out of 1.00

For a given subnet mask 255.128.0.0, what is the number of subnets?

- a. 6
- b. 8
- c. 2
- d. 4

Question 8

Complete

Marked out of 1.00

In a given subnet mask 255.0.0.0, what is the number of Host ID bits?

- a. 221
- b. 21
- c. 12
- d. 24

Question 9

Complete

Marked out of 1.00

Routing inside a single administrative domain is called as..... routing.

- a. Path Vector
- b. None of these
- c. Inter-domain
- d. Intra-domain

**Question 10**

Complete

Marked out of 1.00

Which of the following is incorrect about Network Address Translation?

- a. Certain application will not function while NAT is enabled.
- b. NAT is a process in which one or more local IP address is translated into one or more Global IP address and vice versa.
- c. Router will do NAT translation without configuration.
- d. NAT results in switching path delays.

Question 11

Complete

Marked out of 1.00

The traffic field of IPV6 is similar to which field in the IPV4 header?

- a. Type of service
- b. Option field
- c. Fragmentation field
- d. Fast switching

Question 12

Complete

Marked out of 1.00

The sharing of medium and its links by two or more devices is called

- a. Duplexing
- b. Fully duplexing
- c. Microplexing
- d. Multiplexing

...

Question 13

Complete

Marked out of 1.00

A email service uses which one of the following transport layer protocol?

- a. TCP
- b. HTTP
- c. UDP
- d. Both TCP and UDP

Question 14

Complete

Marked out of 1.00

In link layer, parity bits are used for

- a. to transmit data faster
- b. to detect errors
- c. encryption of data
- d. to identify the user

Question 15

Complete

Marked out of 1.00

Layer that translates between physical (MAC) and logical addresses is

- a. Datalink
- b. Physical
- c. Transport
- d. Network

Question 16

Complete

Marked out of 1.00

Which of the following is incorrect about Network Address Translation?

- a. Certain application will not function while NAT is enabled.
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- c. NAT results in switching path delays.
- d. NAT is a process in which one or more local IP address is translated into one or more Global IP address and vice versa.

Question 17

Complete

Marked out of 1.00

Which multiple access techniques is used by IEEE 802.11 standards for wireless LANs?

- a. CSMA/CD
- b. ALOHA
- c. CSMA
- d. CSMA/CA

Question 18

Complete

Marked out of 1.00

The time required to examine the packet's header and determine where to direct the packet is part of _____

- a. Transmission delay
- b. Processing delay
- c. Propagation delay
- d. Queuing delay

...

Question 19

Complete

Marked out of 1.00

Which fields helps to check rearrangement of the fragments in IPV4?

- a. Fragment Offset
- b. Protocol field value
- c. Flags
- d. Checksum

Question 20

Complete

Marked out of 1.00

The maximum size of payload field in Ethernet frame is

- a. 1300 bytes
 - b. 1000 bytes
 - c. 1500 bytes
 - d. 1200 bytes
- bytes
bytes
bytes
bytes

[◀ CS301_Quiz1_23.11.2023](#)



Started on Thursday, 23 November 2023, 4:30 PM

State Finished

Completed on Thursday, 23 November 2023, 4:52 PM

Time taken 21 mins 53 secs

Question **1**

Complete

Marked out of 1.00

Which of the following is true for Address Resolution Protocol (ARP)?

- a. ARP request is broadcast and ARP reply is also broadcast.
- b. ARP request is broadcast and ARP reply is unicast.
- c. ARP request is unicast and ARP reply is broadcast.
- d. ARP request is unicast and ARP reply is also unicast.

Question **2**

Complete

Marked out of 1.00

Which address identifies a process on a host?

- a. specific address
- b. logical address
- c. port address
- d. physical address

Question 3

Complete

Marked out of 1.00

What is the Hexadecimal equivalent of the following Ethernet address

010110100010001010101000110001010101000001111

- a. 5A115518AA0F
- b. 5A1155189A0E
- c. None of these
- d. 5A115514AA0F

Question 4

Complete

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The number of bits in IPV4 address, IPV6 address, MAC address and Port address are

- a. 128, 32, 48, 16
- b. 32, 128, 64, 16
- c. 32, 128, 48, 16
- d. 32, 128, 48, 32

Question 5

Complete

Marked out of 1.00

Communication between a computer and a speaker involves

- a. Automatic
- b. Full-duplex
- c. Simplex
- d. Half-duplex

Question 6

Complete

Marked out of 1.00

The maximum size of payload field in Ethernet frame is

- a. 1500 bytes
- b. 1200 bytes
- c. 1000 bytes
- d. 1300 bytes

Question 7

Complete

Marked out of 1.00

Which of the following statement is incorrect,

A shared broadcast media of transmission bandwidth 20 Mbps is shared by 100 users then,

- a. Using CDMA scheme, each of the users have an access to 200 Kbps of bandwidth
- b. Using CDMA scheme, each of the users have an access to 20 Mbps of bandwidth
- c. Using FDMA scheme, each of the users have an access to 200 Kbps of bandwidth
- d. Using TDMA scheme, each of the users have an access to 200 Kbps of bandwidth

Question 8

Complete

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Which of the following delay is faced by the packet in travelling from one end system to another?

- a. Queuing delay
- b. Transmission delay
- c. All of these
- d. Propagation delay

Question 9

Complete

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Find out the invalid subnet mask from the following

- a. None of these
- b. 255.255.255.252
- c. 255.255.242.0
- d. 255.240.0.0

Question 10

Complete

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Which of the following is a set of rules that governs the data communication in a computer network

- a. RFCs
- b. None of these
- c. Activity standards
- d. Protocols

Question 11

Complete

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Header of a frame generally contains

- a. MAC addresses
- b. All of these
- c. Frame identifier
- d. Synchronization bytes

Question 12

Complete

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Which one is a valid subnet mask out of the following?

- a. 223.0.0.0
- b. 240.0.0.0
- c. None of these
- d. 255.230.255.0

Question 13

Complete

Marked out of 1.00

What is the class of this IPv4 address **11101111 11110111 11000111 00011101**?

- a. class B
- b. class C
- c. class A
- d. class D

Question 14

Complete

Marked out of 1.00

Transmission rate is decided by

- a. network layer
- b. physical layer
- c. data link layer
- d. transport layer

Question 15

Complete

Marked out of 1.00

The sharing of medium and its links by two or more devices is called

- a. Duplexing
- b. Multiplexing
- c. Microplexing
- d. Fully duplexing

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In link layer, parity bits are used for

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- b. to identify the user
- c. to detect errors
- d. encryption of data

Question 17

Complete

Marked out of 1.00

Ethernet frame consists of

- a. None of these
- b. IP address
- c. Default mask
- d. MAC address

Question 18

Complete

Marked out of 1.00

The function of Digital Subscriber Line Access Multiplexer is to _____

- a. Convert digital signals into analog signals
- b. Amplify digital signals
- c. De-amplify digital signals
- d. Convert analog signals into digital signals

Question 19

Complete

Marked out of 1.00

Which of the following task is not done by data link layer?

- a. Framing
- b. Error control
- c. Flow control
- d. Encoding

Question 20

Complete

Marked out of 1.00

Which physical media provides the highest transmission speed in a network?

- a. twisted pair cable
- b. optical fiber
- c. electrical cable
- d. co-axial cable

Question 21

Complete

Marked out of 1.00

Define the type of this Ethernet frame destination address **FF:FF:FF:FF:FF:FF**

- a. None of these
- b. Unicast
- c. Multicast
- d. Broadcast

Question 22

Complete

Marked out of 1.00

In computer networks nodes are....

- a. the computer that routes the data
- b. the computer that terminates the data
- c. the computer that originates/generates the data
- d. All of these

Question 23

Complete

Marked out of 1.00

What is access points (AP) in a wireless LAN?

- a. both device that allows wireless devices to connect to a wired network and wireless device itself
- b. all nodes in the network
- c. wireless device itself
- d. device that allows wireless devices to connect to a wired network

Question 24

Complete

Marked out of 1.00

Which of the following is link layer protocol

- a. PPP (point-to-point protocol)
- b. HDLC (High Level Data Link control)
- c. All of these
- d. Ethernet

Question 25

Complete

Marked out of 1.00

Which sub-layer of the data link layer performs data link functions that depend upon the type of medium?

- a. network interface control sub-layer
- b. Logical link control sub-layer
- c. error control sub-layer
- d. Media access control sub-layer

Question 26

Complete

Marked out of 1.00

The size of an IP address in IPV6 is.....

- a. 128 bytes
- b. 60 bits
- c. 128 bits
- d. 40bytes

Question 27

Complete

Marked out of 1.00

Which is not true for Packet switching?

- a. The delivery of these packets becomes easy when complicated protocols are used.
- b. Multiple users can use the same channel while transferring their packets.
- c. Installation costs of packet switching are expensive.
- d. A dedicated path is followed throughout the session.

Question 28

Complete

Marked out of 1.00

What is default subnet mask address of this IPV4 address **11001111 11110111 11000111 00011101**?

- a. 255.255.255.255
- b. 255.0.0.0
- c. 255.255.0.0
- d. 255.255.255.0

Question 29

Complete

Marked out of 1.00

Which of the following is not a valid IP address?

- a. 192.25.256.8
- b. 145.6.14.1
- c. 145.6.14.8
- d. 192.168.2.1

Question 30

Complete

Marked out of 1.00

Which is true for circuit switching?

- a. While switching, time is wasted in waiting.
- b. All of these
- c. The rate at which the data is transmitted is constant.
- d. The bandwidth used is not constant.

Question 31

Complete

Marked out of 1.00

What is default subnet mask address of this IPV4 address **172.15.165.1**?

- a. 255.0.0.0
- b. 255.255.255.255
- c. 255.255.255.0
- d. 255.255.0.0

Question 32

Complete

Marked out of 1.00

Optical Network Terminator is connected to splitter using _____

- a. hybrid fiber co-axial cable
- b. Twisted pair cable
- c. microwave link
- d. Optical cable

Question 33

Complete

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A landline telephone network is an example of..... network.

- a. Circuit switched
- b. Line switched
- c. Packet switched
- d. Both packet switched and circuit switched

Question 34

Complete

Marked out of 1.00

Propagation delay depends on

- a. Distance between routers
- b. Transmission rate
- c. Speed of CPU
- d. Packet length

Question 35

Complete

Marked out of 1.00

In class C classful IPv4 addressing format, the number of networks allowed under Class C addresses is

- a. 2^{24}
- b. 2^{21}
- c. 2^7
 2^7
- d. 2^{14}

Question 36

Complete

Marked out of 1.00

What kind of transmission medium is most appropriate to carry data in a computer network that is exposed to electrical interference?

- a. Optical fiber
- b. Coaxial cable
- c. Microwave link
- d. Un-shielded twisted pair

Question 37

Complete

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Transmission delay not depends upon

- a. Distance between routers
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◀ Mid-Semester Exam_CS301 (GNR+Diu)_06-11-2023_9.30 AM to 11.30 AM

Jump to...

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- a. While switching, time is wasted in waiting.
- b. All of these
- c. The rate at which the data is transmitted is constant.
- d. The bandwidth used is not constant.

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What is default subnet mask address of this IPV4 address **172.15.165.1**?

- a. 255.0.0.0
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- c. 255.255.255.0
- d. 255.255.0.0

Question 32

Complete

Marked out of 1.00

Optical Network Terminator is connected to splitter using _____

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- b. Twisted pair cable
- c. microwave link
- d. Optical cable

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A landline telephone network is an example of..... network.

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Propagation delay depends on

- a. Distance between routers
- b. Transmission rate
- c. Speed of CPU
- d. Packet length

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◀ Mid-Semester Exam_CS301 (GNR+Diu)_06-11-2023_9.30 AM to 11.30 AM

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/ [Pre-Mid-Semester Exam CS301 \(Section 1 + Section 2\)_19-08-2021 10.15 ti 11.15 AM](#)

Started on Thursday, 19 August 2021, 10:21 AM

State Finished

Completed on Thursday, 19 August 2021, 10:59 AM

Time taken 38 mins 19 secs

Grade 21.00 out of 30.00 (70%)

Question 1

Complete

Mark 0.00 out of 1.00

Which is true for circuit switching?

- a. The bandwidth used is not constant.
- b. While switching, time is wasted in waiting.
- c. All of these
- d. The rate at which the data is transmitted is constant.

The correct answer is:

The rate at which the data is transmitted is constant.

Question 2

Complete

Mark 1.00 out of 1.00

Ethernet frame consists of

- a. Default mask
- b. None of these
- c. IP address
- d. MAC address

The correct answer is:

MAC address



Question 3

Complete

Mark 1.00 out of 1.00

Which of the following is a set of rules that governs the data communication in a computer network

- a. Protocols
- b. None of these
- c. RFCs
- d. Activity standards

The correct answer is:

Protocols

Question 4

Complete

Mark 2.00 out of 2.00

What will be the propagation time when the distance between two nodes is 2400km? Assuming the communication media between the nodes is fiber cable and the light travels with a speed to be 2×10^8 m/s in the cable.

- a. 2 ms
- b. None of these
- c. 12 ms
- d. 5 ms

The correct answer is:

12 ms



Question 5

Complete

Mark 0.00 out of 2.00

A shared broadcast medium of transmission rate 5 Mbps is being shared by 10 users (U1, U2,U10). Calculate the maximum transmission rate of each of the users if the channel access scheme used is FDMA. If instead of FDMA the scheme being used is CDMA then what will be the maximum transmission rate of each of the users?

- a. 50 Mbps, 5 Mbps
- b. None of these
- c. 500 Kbps, 5000 Kbps
- d. 5000 Kbps, 5000 Kbps

The correct answer is:

500 Kbps, 5000 Kbps

Question 6

Complete

Mark 1.00 out of 1.00

A landline telephone network is an example of..... network.

- a. Circuit switched
- b. Line switched
- c. Packet switched
- d. Both packet switched and circuit switched

The correct answer is:

Circuit switched



Question 7

Complete

Mark 1.00 out of 1.00

Which sub-layer of the data link layer performs data link functions that depend upon the type of medium?

- a. Logical link control sub-layer
- b. error control sub-layer
- c. Media access control sub-layer
- d. network interface control sub-layer

The correct answer is:

Media access control sub-layer

Question 8

Complete

Mark 1.00 out of 1.00

Which address identifies a process on a host?

- a. port address
- b. physical address
- c. logical address
- d. specific address

The correct answer is:

port address



Question 9

Complete

Mark 0.00 out of 1.00

What kind of transmission medium is most appropriate to carry data in a computer network that is exposed to electrical interference?

- a. Coaxial cable
- b. Optical fiber
- c. Microwave link
- d. Un-shielded twisted pair

The correct answer is:

Optical fiber

Question 10

Complete

Mark 1.00 out of 1.00

The sharing of medium and its links by two or more devices is called

- a. Duplexing
- b. Multiplexing
- c. Fully duplexing
- d. Microplexing

The correct answer is:

Multiplexing



Question 11

Complete

Mark 1.00 out of 1.00

Transmission delay not depends upon

- a. Distance between routers
- b. Bandwidth of the medium
- c. Packet length
- d. Transmission rate

The correct answer is:

Distance between routers

Question 12

Complete

Mark 1.00 out of 1.00

In computer networks nodes are....

- a. the computer that originates/generates the data
- b. the computer that routes the data
- c. All of these
- d. the computer that terminates the data

The correct answer is:

All of these



Question 13

Complete

Mark 1.00 out of 1.00

Communication between a computer and a speaker involves

- a. Simplex
- b. Full-duplex
- c. Automatic
- d. Half-duplex

The correct answer is:

Simplex

Question 14

Complete

Mark 1.00 out of 1.00

The function of Digital Subscriber Line Access Multiplexer is to _____

- a. Amplify digital signals
- b. Convert digital signals into analog signals
- c. De-amplify digital signals
- d. Convert analog signals into digital signals

The correct answer is:

Convert analog signals into digital signals



Question 15

Complete

Mark 1.00 out of 1.00

Which of the following task is not done by data link layer?

- a. Flow control
- b. Encoding
- c. Framing
- d. Error control

The correct answer is:

Encoding

Question 16

Complete

Mark 0.00 out of 1.00

Which of the following statement is incorrect,

A shared broadcast media of transmission bandwidth 20 Mbps is shared by 100 users then,

- a. Using TDMA scheme, each of the users have an access to 200 Kbps of bandwidth
- b. Using CDMA scheme, each of the users have an access to 20 Mbps of bandwidth
- c. Using CDMA scheme, each of the users have an access to 200 Kbps of bandwidth
- d. Using FDMA scheme, each of the users have an access to 200 Kbps of bandwidth

The correct answer is:

Using CDMA scheme, each of the users have an access to 200 Kbps of bandwidth



Question 17

Complete

Mark 0.00 out of 1.00

Optical Network Terminator is connected to splitter using _____

- a. Optical cable
- b. Twisted pair cable
- c. microwave link
- d. hybrid fiber co-axial cable

The correct answer is:

Optical cable

Question 18

Complete

Mark 1.00 out of 1.00

In link layer, parity bits are used for

- a. to detect errors
- b. to identify the user
- c. encryption of data
- d. to transmit data faster

The correct answer is:

to detect errors



Question 19

Complete

Mark 1.00 out of 1.00

The number of bits in IPV4 address, IPV6 address, MAC address and Port address are

- a. 32, 128, 64, 16
- b. 128, 32, 48, 16
- c. 32, 128, 48, 32
- d. 32, 128, 48, 16

The correct answer is:

32, 128, 48, 16

Question 20

Complete

Mark 1.00 out of 1.00

Which physical media provides the highest transmission speed in a network?

- a. co-axial cable
- b. optical fiber
- c. electrical cable
- d. twisted pair cable

The correct answer is:

optical fiber



Question 21

Complete

Mark 0.00 out of 3.00

What are the propagation time and the transmission time for a 5Mbyte message (an image) if the transmission rate of the network is 1Mbps? Assume that the distance between the sender and the receiver is 8000 km and that light travels at 4×10^8 m/s.

- a. 50msecs, 40msecs
- b. 2msecs, 40msecs
- c. 2msecs, 40secs
- d. 50msecs, 40secs

The correct answer is:

2msecs, 40secs

Question 22

Complete

Mark 3.00 out of 3.00

The message 11001001 is to be transmitted using CRC polynomial x^3+1 to protect it from errors. The message that should be transmitted after appending the CRC code with the original data is

- a. 1100001010
- b. None of these
- c. 1100001011
- d. 1100001110

The correct answer is:

None of these



Question 23

Complete

Mark 1.00 out of 1.00

Which is not true for Packet switching?

- a. Installation costs of packet switching are expensive.
- b. Multiple users can use the same channel while transferring their packets.
- c. A dedicated path is followed throughout the session.
- d. The delivery of these packets becomes easy when complicated protocols are used.

The correct answer is:

A dedicated path is followed throughout the session.

Question 24

Complete

Mark 1.00 out of 1.00

Header of a frame generally contains

- a. All of these
- b. MAC addresses
- c. Synchronization bytes
- d. Frame identifier

The correct answer is:

All of these

[◀ Mid-Semester Exam_CS301 \(Section 1 + Section 2\)_13-09-2021_9.00 AM to 9.40 AM](#)

Jump to...

[Continuous LAB Assessment_24.08.2021_4.15pm to 4.30pm ►](#)

Started on Friday, 12 November 2021, 1:20 PM

State Finished

Completed on Friday, 12 November 2021, 1:28 PM

Time taken 8 mins 30 secs

Grade 7.00 out of 10.00 (70%)

Question 1

Complete

Mark 1.00 out of 1.00

The well-known port addresses are assigned to the

- a. None of these
- b. Destination
- c. Source
- d. Routers

Question 2

Complete

Mark 1.00 out of 1.00

Which fields helps to check rearrangement of the fragments in IPV4?

- a. Protocol field value
- b. Checksum
- c. Fragment Offset
- d. Flags

Question 3

Complete

Mark 1.00 out of 1.00

A email service uses which one of the following transport layer protocol?

- a. UDP
- b. Both TCP and UDP
- c. HTTP
- d. TCP

Question 4

Complete

Mark 1.00 out of 1.00

The traffic field of IPV6 is similar to which field in the IPV4 header?

- a. Fragmentation field
- b. Type of service
- c. Option field
- d. Fast switching

Question 5

Complete

Mark 1.00 out of 1.00

Fragmentation is done in layer.

- a. Transport Layer
- b. Data link Layer
- c. Physical layer
- d. Network Layer

Question 6

Complete

Mark 1.00 out of 1.00

Which of these is not a type of error-reporting message?

- a. Destination unreachable
- b. Router error
- c. Source quench
- d. Time exceeded

Question 7

Complete

Mark 0.00 out of 1.00

Which of the following is incorrect about Network Address Translation?

- a. Router will do NAT translation without configuration.
- b. NAT is a process in which one or more local IP address is translated into one or more Global IP address and vice versa.
- c. Certain application will not function while NAT is enabled.
- d. NAT results in switching path delays.

Question 8

Complete

Mark 0.00 out of 1.00

Routing inside a single administrative domain is called as..... routing.

- a. Path Vector
- b. Intra-domain
- c. Inter-domain
- d. None of these

Question 9

Complete

Mark 0.00 out of 1.00

In an IPV4 packet, the value of HLEN is 1010 in binary. How many bytes of options are being carried by this packet?

- a. 20 bytes
- b. 12 bytes
- c. 10 bytes
- d. 32 bytes

Question 10

Complete

Mark 1.00 out of 1.00

Which of the following is true for Address Resolution Protocol (ARP)?

- a. ARP request is broadcast and ARP reply is also broadcast.
- b. ARP request is broadcast and ARP reply is unicast.
- c. ARP request is unicast and ARP reply is also unicast.
- d. ARP request is unicast and ARP reply is broadcast.

Jump to...

Continuous LAB Assessment_28.10.2021_4.15pm to 4.30pm ►

Started on Tuesday, 24 August 2021, 4:19 PM

State Finished

Completed on Tuesday, 24 August 2021, 4:25 PM

Time taken 6 mins

Grade 8.00 out of 10.00 (80%)

Question 1

Complete

Mark 1.00 out of 1.00

What will be the propagation time when the distance between two points is 2400km? Assuming the propagation speed to be 4×10^8 m/s in cable

- a. 2ms
- b. 5ms
- c. 1ms
- d. 6ms

The correct answer is:

6ms

Question 2

Complete

Mark 1.00 out of 1.00

The _____ layer links network/user support layers by segmenting and rearranging the data.

- a. application layer
- b. transport layer
- c. session Layer
- d. network layer

The correct answer is:

transport layer

Question 3

Complete

Mark 0.00 out of 1.00

The OSI model was developed ____ TCP/IP model.

- a. None of these
- b. after
- c. simultaneous to
- d. prior to

The correct answer is:

after

Question 4

Complete

Mark 1.00 out of 1.00

Which multiple access techniques is used by IEEE 802.11 standards for wireless LANs?

- a. CSMA
- b. CSMA/CA
- c. ALOHA
- d. CSMA/CD

The correct answer is:

CSMA/CA

Question 5

Complete

Mark 1.00 out of 1.00

In reference to OSI model, TCP/IP model does not have ____

- a. application layer
- b. transport layer
- c. session layer
- d. application layer

The correct answer is:

session layer

Question 6

Complete

Mark 1.00 out of 1.00

Which of the following option is correct?

In wireless distribution system

- a. only one access point exists
- b. access points are not required
- c. multiple access points are inter-connected with each other
- d. there is no access point

The correct answer is:

multiple access points are inter-connected with each other

Question 7

Complete

Mark 1.00 out of 1.00

Which layer is responsible for the process to process delivery in a general network model?

- a. transport layer
- b. network layer
- c. session layer
- d. data link layer

The correct answer is:

transport layer

Question 8

Complete

Mark 1.00 out of 1.00

Transmission data rate is decided by _____

- a. network layer
- b. data link layer
- c. physical layer
- d. transport layer

The correct answer is:

physical layer

Question 9

Complete

Mark 1.00 out of 1.00

There are n stations in a slotted LAN. Each station attempts to transmit with a probability p in each time slot. What is the probability that only one station transmits in a given time slot?

- a. $1-(1-p)^{(n-1)}$
- b. $(1-p)^{(n-1)}$
- c. $p(1-p)^{(n-1)}$
- d. $np(1-p)^{(n-1)}$

The correct answer is:

$np(1-p)^{(n-1)}$

Question 10

Complete

Mark 0.00 out of 1.00

Which multiple access techniques is used by Ethernet standards for wireless LANs

- a. CSMA
- b. CSMA/CD
- c. ALOHA
- d. CSMA/CA

The correct answer is:

CSMA/CD

[◀ Pre-Mid-Semester Exam_CS301 \(Section 1 + Section 2\)_19-08-2021_10.15 ti 11.15 AM](#)[Jump to...](#)

Started on Thursday, 28 October 2021, 4:21 PM

State Finished

Completed on Thursday, 28 October 2021, 4:28 PM

Time taken 7 mins 19 secs

Grade 8.00 out of 10.00 (80%)

Question 1

Complete

Mark 1.00 out of 1.00

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

- a. routing
- b. congestion control
- c. error control
- d. inter-networking

Question 2

Complete

Mark 0.00 out of 1.00

For a given subnet mask 255.128.0.0, what is the number of subnets?

- a. 8
- b. 2
- c. 4
- d. 6

Question 3

Complete

Mark 1.00 out of 1.00

In a given subnet mask 255.0.0.0, what is the number of Host ID bits?

- a. 21
- b. 24
- c. 12
- d. 221

Question 4

Complete

Mark 1.00 out of 1.00

In class C classful IPv4 addressing format, the number of networks allowed under Class C addresses is

- a. 2^{24}
- b. 2^7
- c. 2^{14}
- d. 2^{21}

Question 5

Complete

Mark 1.00 out of 1.00

Error control is responsibility of which OSI layers

- a. Network and Transport layer
- b. Physical and Data link layer
- c. All of these
- d. Data link and Transport layer

Question 6

Complete

Mark 1.00 out of 1.00

Which one of the following protocol is NOT used to resolve one form of address to another one?

- a. **DNS**
- b. **ARP**
- c. **RARP**
- d. **DHCP**

Question 7

Complete

Mark 1.00 out of 1.00

While configuring the router, the IP address assigned to one port is 201.14.2.1/23. LAN1 is attached to this port of the router. Which of the following IP addresses are valid on this LAN1 interface,

- I1: 201.14.1.100**
- I2: 201.14.1.3**
- I3: 201.14.2.2**
- I4: 201.14.3.0**

- a. Only I2 and I3
- b. Only I1 and I2
- c. Only I3 and I4
- d. Only I1 and I3

Question 8

Complete

Mark 0.00 out of 1.00

Find out the invalid subnet mask from the following

- a. **223.0.0.0**
- b. **None of these**
- c. **255.255.255.252**
- d. **255.240.0.0**

Question 9

Complete

Mark 1.00 out of 1.00

In the even parity, find the parity bit of data 1001001001.

- a. **1**
- b. **X**
- c. **0**
- d. **None of these**

Question 10

Complete

Mark 1.00 out of 1.00

In the IPV4 addressing format, the number of hosts allowed under Class A addresses

- a. **2^{32-2}**
- b. **2^{24-2}**
- c. **2^{16-2}**
- d. **2^{8-2}**

[◀ Continuous Assessment_12.11.2021_1.15pm to 1.30pm](#)

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/ [Mid-Semester Exam_CS301 \(Section 1 + Section 2\)_06-09-2022_2.00 PM to 3.00 PM](#)

Started on Tuesday, 6 September 2022, 2:00 PM

State Finished

Completed on Tuesday, 6 September 2022, 2:53 PM

Time taken 53 mins 8 secs

Question 1

Complete

Marked out of 1.00

Which of the following statement is correct for Slotted Aloha

- a. divide time into discrete time intervals
- b. None of these
- c. require global time synchronization
- d. divide time into discrete time intervals and also requires global time synchronization

Question 2

Complete

Marked out of 1.00

Which of the following statements is not applicable for cable internet access?

- a. It includes Hybrid Fiber Co-axials
- b. Analog signal is converted to digital signal in DSLAM
- c. Cable modem connects home PC to Ethernet port
- d. It is a shared broadcast medium



Question 3

Complete

Marked out of 1.00

What is the role of logical link control sublayer in layer 2?

a. Connection Establishment

b. Sequencing

c. Error detection

d. Acknowledgment

Question 4

Complete

Marked out of 1.00

In slotted ALOHA, the vulnerable time is _____ the frame transmission time.

a. half of a frame transmission time

b. twice of a frame transmission time

c. same as the a frame transmission time

d. None of these



Question 5

Complete

Marked out of 1.00

What is the primary purpose of a virtual local area networks?

- a. To create a virtual private network
- b. Demonstrating the proper layout for network
- c. Segmenting a network inside a switch or device
- d. Simulating a network

Question 6

Complete

Marked out of 1.00

In Carrier Sense Multiple Access which node senses the channel, if idle it sends the data, otherwise it checks the medium after a random amount of time (not continuously) and transmits when found idle.

- a. 1-persistent
- b. 0-persistent
- c. Non-persistent
- d. P-persistent

Question 7

Complete

Marked out of 1.00

The time required to examine the packet's header and determine where to direct the packet is part of _____

- a. Queuing delay
- b. Transmission delay
- c. Propagation delay
- d. Processing delay

Question 8

Complete

Marked out of 1.00

Layer that translates between physical (MAC) and logical addresses is

- a. Network
- b. Transport
- c. Physical
- d. Datalink

Question 9

Complete

Marked out of 1.00

Which of the following protocols is the bit-oriented protocol?

- a. HTTP
- b. SSL
- c. HDLC
- d. All of these

Question 10

Complete

Marked out of 1.00

What are not the responsibilities of the Data link Layer?

- a. IP addressing
- b. MAC addressing
- c. Error detection
- d. Framing



Question 11

Complete

Marked out of 1.00

What is the total vulnerable time value of pure Aloha?

- a. None of these
- b. T_{fr}
- c. $2 \times T_{fr}$
- d. $\frac{1}{2} T_{fr}$

Question 12

Complete

Marked out of 1.00

What are not the responsibilities of the Network Layer?

- a. Routing
- b. IP addressing
- c. Path determination
- d. Framing

Question 13

Complete

Marked out of 1.00

Which are end system devices

- a. All of these
- b. smartphones
- c. web servers
- d. mail servers



Question 14

Complete

Marked out of 1.00

The OSI model was developed ____ TCP/IP model.

- a. with no link to TCP/IP
- b. prior to
- c. simultaneous to
- d. after

Question 15

Complete

Marked out of 2.00

The sender employs the "Go Back 10 ARQ" scheme. A 50 Kbps link has a propagation speed of 2×10^8 m/s. The transmitter and receiver is at 2000 km distance from each other. Each frame is 100 bytes long, assuming no transmission delay what will be the minimum round trip time delay for transmission of 1 million bits?

- a. 20 ms
- b. None of these
- c. 10 ms
- d. 50 ms

Question 16

Complete

Marked out of 1.00

The length of theof a specific packet will depend on the number of earlier-arriving packets that are queued and waiting for transmission onto the link.

- a. None of these
- b. Propagation delay
- c. Transmission delay
- d. Queuing delay

Question 17

Complete

Marked out of 1.00

Which multiple access techniques is used by IEEE 802.11 standards for wireless LANs?

- a. CSMA
- b. ALOHA
- c. CSMA/CA
- d. CSMA/CD

Question 18

Complete

Marked out of 1.00

In the transfer of files between four pairs of client-servers through a common transmission channel of transmission rate 1 Mbps. All the server access links have a transmission rate of 2 Mbps and all the client access links have a transmission rate of 2.5 Mbps, the throughput of this network will be

- a. 2.5 Mbps
- b. None of these
- c. 0.25 Mbps
- d. 2 Mbps

Question 19

Complete

Marked out of 1.00

A sender-receiver employs even parity for error correction scheme, what will be the parity bit for 1001011?

- a. 1
- b. 0
- c. None of these
- d. 2



Question 20

Complete

Marked out of 2.00

Consider the Go-back-N protocol with a sender's window size of '8'. Suppose at time 't' the next frame in the buffer (i.e. the next inorder frame) the receiver is expecting has a sequence No. 5. Assume that the medium does not reorder the messages. What is the possible set of sequence number inside the sender's window at time 't'. Assume the sender has already received acknowledgment for all the previously transmitted frames.

- a. [4, 12]
- b. None of these
- c. [5, 12]
- d. [5, 13]

Question 21

Complete

Marked out of 1.00

A three-layer switch can be called as.....

- a. Bridge
- b. Router
- c. None of these
- d. Repeater

Question 22

Complete

Marked out of 1.00

What are not the responsibilities of the Data link Layer?

- a. IP addressing
- b. MAC addressing
- c. Error detection
- d. Framing

Question 23

Complete

Marked out of 1.00

In reference to OSI model, TCP/IP model does not have _____

- a. network layer
- b. transport layer
- c. application layer
- d. session layer

Question 24

Complete

Marked out of 1.00

What will be the propagation time when the distance between two points is 2400km? Assuming the propagation speed to be 4×10^8 m/s in cable.

- a. 1 ms
- b. 6ms
- c. 2 ms
- d. 5ms

Question 25

Complete

Marked out of 1.00

Which of the following statement is incorrect, if the transmission bandwidth of a shared broadcast media of 50 Mbps is shared by 500 users then,

- a. Using FDMA scheme, each of the users have an access to 100 Kbps of bandwidth
- b. Using CDMA scheme, each of the users have an access to 100 Kbps of bandwidth
- c. Using TDMA scheme, each of the users have an access to 100 Kbps of bandwidth
- d. Using CDMA scheme, each of the users have an access to 50 Mbps of bandwidth

Question 26

Complete

Marked out of 1.00

The functions of _____ layer in the OSI model are handled by the transport layer itself in TCP/IP.

- a. network layer and presentation
- b. application layer and session
- c. presentation and session
- d. transport layer and session



Question 27

Complete

Marked out of 1.00

The _____ layer links network/user support layers by segmenting and rearranging the data.

- a. Session Layer
- b. Network Layer
- c. Transport Layer
- d. Application Layer

Question 28

Complete

Marked out of 1.00

Which is true for Circuit Switching?

- a. The bandwidth used is not fixed.
- b. The bandwidth used is not fixed.
- c. The bandwidth used is not fixed.
- d. All true

Question 29

Complete

Marked out of 1.00

Transmission data rate is decided by _____.

- a. data link layer
- b. transport layer
- c. network layer
- d. physical layer

Question 30

Complete

Marked out of 1.00

In Carrier Sense Multiple Access, which CSMA scheme senses the channel, if idle it sends the data, otherwise it continuously keeps on checking the medium for being idle and transmits unconditionally as soon as the channel gets idle.

- a. O-persistent
- b. 1-persistent
- c. P-persistent
- d. Non-persistent

Question 31

Complete

Marked out of 1.00

Error detection and correction are offered by both

- a. Network Layer and Transport Layer
- b. Data link layer and Network Layer
- c. Physical Layer and Data link Layer
- d. Data link layer and Transport Layer



Question 32

Complete

Marked out of 1.00

To avoid collisions on wireless networks, _____ was invented.

- a. CSMA/CD
- b. CSMA/CA
- c. Ethernet
- d. None of these

Question 33

Complete

Marked out of 1.00

Which is not true for Packet switching?

- a. Multiple users can use the same channel while transferring their packets.
- b. Multiple users can use the same channel while transferring their packets.
- c. The delivery of these packets becomes easy when complicated protocols are used.
- d. Installation costs of packet switching are expensive.

Question 34

Complete

Marked out of 1.00

The technique of temporarily delaying acknowledgements so that they can be hooked onto the next outgoing data frame is called

- a. Cyclic redundancy check
- b. None of these
- c. Piggybacking
- d. Parity check

Question 35

Complete

Marked out of 1.00

In _____, each station is forced to send only at the beginning of the time slot.

- a. Pure Aloha
- b. Slotted Aloha
- c. CSMA/CD
- d. CSMA/CA

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/ [QUIZ 3_CS301 \(Section 1 + Section 2\)_04-11-2022_11.00 PM to 11.15 PM](#)

Started on Friday, 4 November 2022, 11:00 AM

State Finished

Completed on Friday, 4 November 2022, 11:14 AM

Time taken 14 mins 52 secs

Grade **12.00** out of 15.00 (80%)

Question **1**

Complete

Mark 1.00 out of 1.00

If the value in protocol field is 2 in IPV4 header, the protocol used is.....?

- a. ICMP
- b. TCP
- c. UDP
- d. IGMP

Question **2**

Complete

Mark 1.00 out of 1.00

What should be the flag value to indicate the last fragment?

- a. Time to live value
- b. M = 1
- c. None of these
- d. M = 0

Question 3

Complete

Mark 1.00 out of 1.00

The traffic field of IPV6 is similar to which field in the IPV4 header?

- a. Option field
- b. Fragmentation field
- c. Type of service
- d. Fast switching

Question 4

Complete

Mark 1.00 out of 1.00

What is the network address of the subnet which contains a host with the IP address 192.168.12.198 with subnet mask 255.255.255.0?

- a. 192.168.0.0
- b. 192.168.12.12
- c. 192.168.12.0
- d. 192.168.12.255

Question 5

Complete

Mark 1.00 out of 1.00

Which fields helps to check rearrangement of the fragments in IPV4?

- a. Flags
- b. Checksum
- c. Fragment Offset
- d. Protocol field value

Question 6

Complete

Mark 1.00 out of 1.00

Consider three devices A, B, and C with IP addresses 100.10.5.2, 100.10.5.5 and 100.10.5.6 respectively. The subnet mask is set to 255.255.255.252 for all the three devices. Which one of the following is true?

- a. Only A and B belong to same subnet
- b. A, B, and C all belongs to three different subnets
- c. A, B, and C all belongs to the same subnet
- d. only B and C belongs to same subnet

Question 7

Complete

Mark 0.00 out of 1.00

Which of the following is incorrect about NAT?

- a. Static Nat creates affixed translation of private addresses to public addresses.
- b. NAT does not conserve IPV4 addresses.
- c. NAT helps to reuse private IP addresses.
- d. Static NAT allows the user to configure one-to-one translation.

Question 8

Complete

Mark 0.00 out of 1.00

Suppose the IP address of device **1** is 10.10.36.1 and device **2** is 10.10.12.1 and the subnet mask used is 255.255.0.0. Both the devices will be able to communicate with each other using

- a. None of these
- b. Router
- c. Switch
- d. Hub

Question 9

Complete

Mark 1.00 out of 1.00

Two popular routing tables are Distance Vector and Link State routing, which of the following are true?

1. count-to-infinity is a problem only in distance vector and not in link state routing.
2. In link state, the shortest path algorithm is run only at one node.
3. In distance vector, the shortest path algorithm is run only at one node.
4. Distance vector requires fewer number of network messages than link state.

- a. 1, 2 and 4 only
- b. 1, 3, and 4 only
- c. 2 and 3 only
- d. 1 and 4 only

Question 10

Complete

Mark 1.00 out of 1.00

In an IPv4 packet, the value of HLEN is 1010 in binary. How many bytes of options are being carried by this packet?

- a. 12 bytes
- b. 20 bytes
- c. 10 bytes
- d. 32 bytes

Question 11

Complete

Mark 1.00 out of 1.00

The following is a dump of a UDP header in hexadecimal format

0632000D001EE217

What is the total length of the datagram?

- a. 22 bits
- b. 22 bytes
- c. 8 bytes
- d. 20 bytes

Question 12

Complete

Mark 0.00 out of 1.00

An organization is granted the block 130.34.12.64/26. Find the maximum number of host addresses that can be assigned for this network?

- a. 32
- b. 18
- c. 256
- d. None of these

Question 13

Complete

Mark 1.00 out of 1.00

Which of these is not a type of error-reporting message?

- a. Source quench
- b. Router error
- c. Time exceeded
- d. Destination unreachable

Question 14

Complete

Mark 1.00 out of 1.00

What is the type of the destination address of these Ethernet address 4A:30:10:21:10:1A

- a. Broadcast
- b. Not a valid address
- c. Multicast
- d. Unicast

Question 15

Complete

Mark 1.00 out of 1.00

Suppose the IP address of device **1** is 162.198.2.1 and device **2** is 162.198.3.2 and the subnet mask used is 255.255.255.0. Both the devices will be able to communicate with each other using switch

- a. True
- b. False

Jump to...

[Announcements ►](#)

Started on Tuesday, 6 September 2022, 2:00 PM

State Finished

Completed on Tuesday, 6 September 2022, 2:46 PM

Time taken 46 mins 35 secs

Grade **26.00** out of 37.00 (**70%**)

Question **1**

Complete

Mark 0.00 out of 1.00

What is the role of logical link control sublayer in layer 2?

- a. Acknowledgment
- b. Error detection
- c. Sequencing
- d. Connection Establishment

The correct answer is:

Error detection

Question **2**

Complete

Mark 2.00 out of 2.00

Consider the Go-back-N protocol with a sender's window size of '8'. Suppose at time 't' the next frame in the buffer (i.e. the next inorder frame) the receiver is expecting has a sequence No. 5. Assume that the medium does not reorder the messages. What is the possible set of sequence number inside the sender's window at time 't'. Assume the sender has already received acknowledgment for all the previously transmitted frames.

- a. [5, 12]
- b. [4, 12]
- c. [5, 13]
- d. None of these

The correct answer is:

[5, 12]

Question 3

Complete

Mark 1.00 out of 1.00

The OSI model was developed ____ TCP/IP model.

- a. after
- b. prior to
- c. simultaneous to
- d. with no link to TCP/IP

The correct answer is:

after

Question 4

Complete

Mark 0.00 out of 1.00

In Carrier Sense Multiple Access which node senses the channel, if idle it sends the data, otherwise it checks the medium after a random amount of time (not continuously) and transmits when found idle.

- a. O-persistent
- b. 1-persistent
- c. P-persistent
- d. Non-persistent

The correct answer is:

Non-persistent

Question 5

Complete

Mark 1.00 out of 1.00

What are not the responsibilities of the Data link Layer?

- a. MAC addressing
- b. IP addressing
- c. Error detection
- d. Framing

The correct answer is:

IP addressing

Question 6

Complete

Mark 0.00 out of 1.00

What is the primary purpose of a virtual local area networks?

- a. Segmenting a network inside a switch or device
- b. Demonstrating the proper layout for network
- c. To create a virtual private network
- d. Simulating a network

The correct answer is:

Segmenting a network inside a switch or device

Question 7

Complete

Mark 0.00 out of 1.00

In the transfer of files between four pairs of client-servers through a common transmission channel of transmission rate 1 Mbps. All the server access links have a transmission rate of 2 Mbps and all the client access links have a transmission rate of 2.5 Mbps, the throughput of this network will be

- a. None of these
- b. 2.5 Mbps
- c. 0.25 Mbps
- d. 2 Mbps

The correct answer is:

0.25 Mbps

Question 8

Complete

Mark 1.00 out of 1.00

The time required to examine the packet's header and determine where to direct the packet is part of _____

- a. Processing delay
- b. Transmission delay
- c. Queuing delay
- d. Propagation delay

The correct answer is:

Processing delay

Question 9

Complete

Mark 0.00 out of 1.00

Which of the following statements is not applicable for cable internet access?

- a. Analog signal is converted to digital signal in DSLAM
- b. Cable modem connects home PC to Ethernet port
- c. It includes Hybrid Fiber Co-axials
- d. It is a shared broadcast medium

The correct answer is:

Analog signal is converted to digital signal in DSLAM

Question 10

Complete

Mark 0.00 out of 1.00

What are not the responsibilities of the Network Layer?

- a. Routing
- b. Path determination
- c. IP addressing
- d. Framing

The correct answer is:

Framing

Question 11

Complete

Mark 1.00 out of 1.00

In slotted ALOHA, the vulnerable time is _____ the frame transmission time.

- a. same as the a frame transmission time
- b. twice of a frame transmission time
- c. None of these
- d. half of a frame transmission time

The correct answer is:

same as the a frame transmission time

Question 12

Complete

Mark 1.00 out of 1.00

Which multiple access techniques is used by IEEE 802.11 standards for wireless LANs?

- a. CSMA/CA
- b. CSMA
- c. ALOHA
- d. CSMA/CD

The correct answer is:

CSMA/CA

Question 13

Complete

Mark 1.00 out of 1.00

The _____ layer links network/user support layers by segmenting and rearranging the data.

- a. Network Layer
- b. Session Layer
- c. Application Layer
- d. Transport Layer

The correct answer is:

Transport Layer

Question 14

Complete

Mark 1.00 out of 1.00

Which are end system devices

- a. web servers
- b. mail servers
- c. smartphones
- d. All of these

The correct answer is:

All of these

Question 15

Complete

Mark 0.00 out of 1.00

A three-layer switch can be called as.....

- a. Router
- b. Repeater
- c. Bridge
- d. None of these

The correct answer is:

Router

Question 16

Complete

Mark 1.00 out of 1.00

The length of theof a specific packet will depend on the number of earlier-arriving packets that are queued and waiting for transmission onto the link.

- a. Transmission delay
- b. Queuing delay
- c. Propagation delay
- d. None of these

The correct answer is:

Queuing delay

Question 17

Complete

Mark 0.00 out of 1.00

Error detection and correction are offered by both

- a. Data link layer and Transport Layer
- b. Network Layer and Transport Layer
- c. Data link layer and Network Layer
- d. Physical Layer and Data link Layer

The correct answer is:

Data link layer and Transport Layer

Question 18

Complete

Mark 1.00 out of 1.00

Which is not true for Packet switching?

- a. The delivery of these packets becomes easy when complicated protocols are used.
- b. Multiple users can use the same channel while transferring their packets.
- c. Multiple users can use the same channel while transferring their packets.
- d. Installation costs of packet switching are expensive.

The correct answer is:

Multiple users can use the same channel while transferring their packets.

Question 19

Complete

Mark 1.00 out of 1.00

What are not the responsibilities of the Data link Layer?

- a. IP addressing
- b. Framing
- c. MAC addressing
- d. Error detection

The correct answer is:

IP addressing

Question 20

Complete

Mark 1.00 out of 1.00

What will be the propagation time when the distance between two points is 2400km? Assuming the propagation speed to be 4×10^8 m/s in cable.

- a. 1 ms
- b. 5ms
- c. 2 ms
- d. 6ms

The correct answer is:

6ms

Question 21

Complete

Mark 1.00 out of 1.00

Which of the following statement is correct for Slotted Aloha

- a. None of these
- b. require global time synchronization
- c. divide time into discrete time intervals and also requires global time synchronization
- d. divide time into discrete time intervals

The correct answer is:

divide time into discrete time intervals and also requires global time synchronization

Question 22

Complete

Mark 1.00 out of 1.00

To avoid collisions on wireless networks, _____ was invented.

- a. CSMA/CD
- b. None of these
- c. CSMA/CA
- d. Ethernet

The correct answer is:

CSMA/CA

Question 23

Complete

Mark 1.00 out of 1.00

A sender-receiver employs even parity for error correction scheme, what will be the parity bit for 1001011?

- a. 1
- b. None of these
- c. 2
- d. 0

The correct answer is:

0

Question 24

Complete

Mark 1.00 out of 1.00

In Carrier Sense Multiple Access, which CSMA scheme senses the channel, if idle it sends the data, otherwise it continuously keeps on checking the medium for being idle and transmits unconditionally as soon as the channel gets idle.

- a. 1-persistent
- b. O-persistent
- c. Non-persistent
- d. P-persistent

The correct answer is:

1-persistent

Question 25

Complete

Mark 1.00 out of 1.00

Which of the following protocols is the bit-oriented protocol?

- a. HTTP
- b. HDLC
- c. All of these
- d. SSL

The correct answer is:

HDLC

Question 26

Complete

Mark 1.00 out of 1.00

The technique of temporarily delaying acknowledgements so that they can be hooked onto the next outgoing data frame is called

- a. Parity check
- b. None of these
- c. Cyclic redundancy check
- d. Piggybacking

The correct answer is:

Piggybacking

Question 27

Complete

Mark 0.00 out of 1.00

Which is true for Circuit Switching?

- a. All true
- b. The bandwidth used is not fixed.
- c. The bandwidth used is not fixed.
- d. The bandwidth used is not fixed.

The correct answer is:

The bandwidth used is not fixed.

Question 28

Complete

Mark 1.00 out of 1.00

What is the total vulnerable time value of pure Aloha?

- a. T_{fr}
- b. $\frac{1}{2} T_{fr}$
- c. $2 \times T_{fr}$
- d. None of these

The correct answer is:

$2 \times T_{fr}$

Question 29

Complete

Mark 2.00 out of 2.00

The sender employs the "Go Back 10 ARQ" scheme. A 50 Kbps link has a propagation speed of 2×10^8 m/s. The transmitter and receiver is at 2000 km distance from each other. Each frame is 100 bytes long, assuming no transmission delay what will be the minimum round trip time delay for transmission of 1 million bits?

- a. 20 ms
- b. 10 ms
- c. 50 ms
- d. None of these

The correct answer is:

20 ms

Question 30

Complete

Mark 1.00 out of 1.00

Layer that translates between physical (MAC) and logical addresses is

- a. Datalink
- b. Transport
- c. Network
- d. Physical

The correct answer is:

Network

Question 31

Complete

Mark 1.00 out of 1.00

The functions of _____ layer in the OSI model are handled by the transport layer itself in TCP/IP.

a. network layer and presentation

b. presentation and session

c. transport layer and session

d. application layer and session

The correct answer is:

presentation and session

Question 32

Complete

Mark 0.00 out of 1.00

In reference to OSI model, TCP/IP model does not have _____

a. application layer

b. network layer

c. transport layer

d. session layer

The correct answer is:

session layer

Question 33

Complete

Mark 1.00 out of 1.00

Transmission data rate is decided by _____.

- a. data link layer
- b. transport layer
- c. physical layer
- d. network layer

The correct answer is:

physical layer

Question 34

Complete

Mark 1.00 out of 1.00

In _____, each station is forced to send only at the beginning of the time slot.

- a. CSMA/CA
- b. Slotted Aloha
- c. Pure Aloha
- d. CSMA/CD

The correct answer is:

Slotted Aloha

Question 35

Complete

Mark 0.00 out of 1.00

Which of the following statement is incorrect, if the transmission bandwidth of a shared broadcast media of 50 Mbps is shared by 500 users then,

- a. Using FDMA scheme, each of the users have an access to 100 Kbps of bandwidth
- b. Using CDMA scheme, each of the users have an access to 50 Mbps of bandwidth
- c. Using CDMA scheme, each of the users have an access to 100 Kbps of bandwidth
- d. Using TDMA scheme, each of the users have an access to 100 Kbps of bandwidth

The correct answer is:

Using CDMA scheme, each of the users have an access to 100 Kbps of bandwidth

[◀ Announcements](#)

Jump to...

[Dashboard](#) / [Courses](#) / [Autumn 2021-22](#) / [BTech Sem-5](#) / [CS301_CSE & IT](#) / [General](#)

/ [Pre-Mid-Semester Exam CS301 \(Section 1 + Section 2\)_19-08-2021 10.15 ti 11.15 AM](#)

Started on Thursday, 19 August 2021, 10:21 AM

State Finished

Completed on Thursday, 19 August 2021, 10:59 AM

Time taken 38 mins 19 secs

Grade 21.00 out of 30.00 (70%)

Question 1

Complete

Mark 0.00 out of 1.00

Which is true for circuit switching?

- a. The bandwidth used is not constant.
- b. While switching, time is wasted in waiting.
- c. All of these
- d. The rate at which the data is transmitted is constant.

The correct answer is:

The rate at which the data is transmitted is constant.

Question 2

Complete

Mark 1.00 out of 1.00

Ethernet frame consists of

- a. Default mask
- b. None of these
- c. IP address
- d. MAC address

The correct answer is:

MAC address



Question 3

Complete

Mark 1.00 out of 1.00

Which of the following is a set of rules that governs the data communication in a computer network

- a. Protocols
- b. None of these
- c. RFCs
- d. Activity standards

The correct answer is:

Protocols

Question 4

Complete

Mark 2.00 out of 2.00

What will be the propagation time when the distance between two nodes is 2400km? Assuming the communication media between the nodes is fiber cable and the light travels with a speed to be 2×10^8 m/s in the cable.

- a. 2 ms
- b. None of these
- c. 12 ms
- d. 5 ms

The correct answer is:

12 ms



Question 5

Complete

Mark 0.00 out of 2.00

A shared broadcast medium of transmission rate 5 Mbps is being shared by 10 users (U1, U2,U10). Calculate the maximum transmission rate of each of the users if the channel access scheme used is FDMA. If instead of FDMA the scheme being used is CDMA then what will be the maximum transmission rate of each of the users?

- a. 50 Mbps, 5 Mbps
- b. None of these
- c. 500 Kbps, 5000 Kbps
- d. 5000 Kbps, 5000 Kbps

The correct answer is:

500 Kbps, 5000 Kbps

Question 6

Complete

Mark 1.00 out of 1.00

A landline telephone network is an example of..... network.

- a. Circuit switched
- b. Line switched
- c. Packet switched
- d. Both packet switched and circuit switched

The correct answer is:

Circuit switched



Question 7

Complete

Mark 1.00 out of 1.00

Which sub-layer of the data link layer performs data link functions that depend upon the type of medium?

- a. Logical link control sub-layer
- b. error control sub-layer
- c. Media access control sub-layer
- d. network interface control sub-layer

The correct answer is:

Media access control sub-layer

Question 8

Complete

Mark 1.00 out of 1.00

Which address identifies a process on a host?

- a. port address
- b. physical address
- c. logical address
- d. specific address

The correct answer is:

port address



Question 9

Complete

Mark 0.00 out of 1.00

What kind of transmission medium is most appropriate to carry data in a computer network that is exposed to electrical interference?

- a. Coaxial cable
- b. Optical fiber
- c. Microwave link
- d. Un-shielded twisted pair

The correct answer is:

Optical fiber

Question 10

Complete

Mark 1.00 out of 1.00

The sharing of medium and its links by two or more devices is called

- a. Duplexing
- b. Multiplexing
- c. Fully duplexing
- d. Microplexing

The correct answer is:

Multiplexing



Question 11

Complete

Mark 1.00 out of 1.00

Transmission delay not depends upon

- a. Distance between routers
- b. Bandwidth of the medium
- c. Packet length
- d. Transmission rate

The correct answer is:

Distance between routers

Question 12

Complete

Mark 1.00 out of 1.00

In computer networks nodes are....

- a. the computer that originates/generates the data
- b. the computer that routes the data
- c. All of these
- d. the computer that terminates the data

The correct answer is:

All of these



Question 13

Complete

Mark 1.00 out of 1.00

Communication between a computer and a speaker involves

- a. Simplex
- b. Full-duplex
- c. Automatic
- d. Half-duplex

The correct answer is:

Simplex

Question 14

Complete

Mark 1.00 out of 1.00

The function of Digital Subscriber Line Access Multiplexer is to _____

- a. Amplify digital signals
- b. Convert digital signals into analog signals
- c. De-amplify digital signals
- d. Convert analog signals into digital signals

The correct answer is:

Convert analog signals into digital signals



Question 15

Complete

Mark 1.00 out of 1.00

Which of the following task is not done by data link layer?

- a. Flow control
- b. Encoding
- c. Framing
- d. Error control

The correct answer is:

Encoding

Question 16

Complete

Mark 0.00 out of 1.00

Which of the following statement is incorrect,

A shared broadcast media of transmission bandwidth 20 Mbps is shared by 100 users then,

- a. Using TDMA scheme, each of the users have an access to 200 Kbps of bandwidth
- b. Using CDMA scheme, each of the users have an access to 20 Mbps of bandwidth
- c. Using CDMA scheme, each of the users have an access to 200 Kbps of bandwidth
- d. Using FDMA scheme, each of the users have an access to 200 Kbps of bandwidth

The correct answer is:

Using CDMA scheme, each of the users have an access to 200 Kbps of bandwidth



Question 17

Complete

Mark 0.00 out of 1.00

Optical Network Terminator is connected to splitter using _____

- a. Optical cable
- b. Twisted pair cable
- c. microwave link
- d. hybrid fiber co-axial cable

The correct answer is:

Optical cable

Question 18

Complete

Mark 1.00 out of 1.00

In link layer, parity bits are used for

- a. to detect errors
- b. to identify the user
- c. encryption of data
- d. to transmit data faster

The correct answer is:

to detect errors



Question 19

Complete

Mark 1.00 out of 1.00

The number of bits in IPV4 address, IPV6 address, MAC address and Port address are

- a. 32, 128, 64, 16
- b. 128, 32, 48, 16
- c. 32, 128, 48, 32
- d. 32, 128, 48, 16

The correct answer is:

32, 128, 48, 16

Question 20

Complete

Mark 1.00 out of 1.00

Which physical media provides the highest transmission speed in a network?

- a. co-axial cable
- b. optical fiber
- c. electrical cable
- d. twisted pair cable

The correct answer is:

optical fiber



Question 21

Complete

Mark 0.00 out of 3.00

What are the propagation time and the transmission time for a 5Mbyte message (an image) if the transmission rate of the network is 1Mbps? Assume that the distance between the sender and the receiver is 8000 km and that light travels at 4×10^8 m/s.

- a. 50msecs, 40msecs
- b. 2msecs, 40msecs
- c. 2msecs, 40secs
- d. 50msecs, 40secs

The correct answer is:

2msecs, 40secs

Question 22

Complete

Mark 3.00 out of 3.00

The message 11001001 is to be transmitted using CRC polynomial x^3+1 to protect it from errors. The message that should be transmitted after appending the CRC code with the original data is

- a. 1100001010
- b. None of these
- c. 1100001011
- d. 1100001110

The correct answer is:

None of these



Question 23

Complete

Mark 1.00 out of 1.00

Which is not true for Packet switching?

- a. Installation costs of packet switching are expensive.
- b. Multiple users can use the same channel while transferring their packets.
- c. A dedicated path is followed throughout the session.
- d. The delivery of these packets becomes easy when complicated protocols are used.

The correct answer is:

A dedicated path is followed throughout the session.

Question 24

Complete

Mark 1.00 out of 1.00

Header of a frame generally contains

- a. All of these
- b. MAC addresses
- c. Synchronization bytes
- d. Frame identifier

The correct answer is:

All of these

[◀ Mid-Semester Exam_CS301 \(Section 1 + Section 2\)_13-09-2021_9.00 AM to 9.40 AM](#)

Jump to...

[Continuous LAB Assessment_24.08.2021_4.15pm to 4.30pm ►](#)

Started on Friday, 12 November 2021, 1:20 PM

State Finished

Completed on Friday, 12 November 2021, 1:28 PM

Time taken 8 mins 30 secs

Grade 7.00 out of 10.00 (70%)

Question 1

Complete

Mark 1.00 out of 1.00

The well-known port addresses are assigned to the

- a. None of these
- b. Destination
- c. Source
- d. Routers

Question 2

Complete

Mark 1.00 out of 1.00

Which fields helps to check rearrangement of the fragments in IPV4?

- a. Protocol field value
- b. Checksum
- c. Fragment Offset
- d. Flags

Question 3

Complete

Mark 1.00 out of 1.00

A email service uses which one of the following transport layer protocol?

- a. UDP
- b. Both TCP and UDP
- c. HTTP
- d. TCP

Question 4

Complete

Mark 1.00 out of 1.00

The traffic field of IPV6 is similar to which field in the IPV4 header?

- a. Fragmentation field
- b. Type of service
- c. Option field
- d. Fast switching

Question 5

Complete

Mark 1.00 out of 1.00

Fragmentation is done in layer.

- a. Transport Layer
- b. Data link Layer
- c. Physical layer
- d. Network Layer

Question 6

Complete

Mark 1.00 out of 1.00

Which of these is not a type of error-reporting message?

- a. Destination unreachable
- b. Router error
- c. Source quench
- d. Time exceeded

Question 7

Complete

Mark 0.00 out of 1.00

Which of the following is incorrect about Network Address Translation?

- a. Router will do NAT translation without configuration.
- b. NAT is a process in which one or more local IP address is translated into one or more Global IP address and vice versa.
- c. Certain application will not function while NAT is enabled.
- d. NAT results in switching path delays.

Question 8

Complete

Mark 0.00 out of 1.00

Routing inside a single administrative domain is called as..... routing.

- a. Path Vector
- b. Intra-domain
- c. Inter-domain
- d. None of these



Question 9

Complete

Mark 0.00 out of 1.00

In an IPV4 packet, the value of HLEN is 1010 in binary. How many bytes of options are being carried by this packet?

- a. 20 bytes
- b. 12 bytes
- c. 10 bytes
- d. 32 bytes

Question 10

Complete

Mark 1.00 out of 1.00

Which of the following is true for Address Resolution Protocol (ARP)?

- a. ARP request is broadcast and ARP reply is also broadcast.
- b. ARP request is broadcast and ARP reply is unicast.
- c. ARP request is unicast and ARP reply is also unicast.
- d. ARP request is unicast and ARP reply is broadcast.

Jump to...

Continuous LAB Assessment_28.10.2021_4.15pm to 4.30pm ►

Started on Tuesday, 24 August 2021, 4:19 PM

State Finished

Completed on Tuesday, 24 August 2021, 4:25 PM

Time taken 6 mins

Grade 8.00 out of 10.00 (80%)

Question 1

Complete

Mark 1.00 out of 1.00

What will be the propagation time when the distance between two points is 2400km? Assuming the propagation speed to be 4×10^8 m/s in cable

- a. 2ms
- b. 5ms
- c. 1ms
- d. 6ms

The correct answer is:

6ms

Question 2

Complete

Mark 1.00 out of 1.00

The _____ layer links network/user support layers by segmenting and rearranging the data.

- a. application layer
- b. transport layer
- c. session Layer
- d. network layer

The correct answer is:

transport layer

Question 3

Complete

Mark 0.00 out of 1.00

The OSI model was developed ____ TCP/IP model.

- a. None of these
- b. after
- c. simultaneous to
- d. prior to

The correct answer is:

after

Question 4

Complete

Mark 1.00 out of 1.00

Which multiple access techniques is used by IEEE 802.11 standards for wireless LANs?

- a. CSMA
- b. CSMA/CA
- c. ALOHA
- d. CSMA/CD

The correct answer is:

CSMA/CA

Question 5

Complete

Mark 1.00 out of 1.00

In reference to OSI model, TCP/IP model does not have ____

- a. application layer
- b. transport layer
- c. session layer
- d. application layer

The correct answer is:

session layer

Question 6

Complete

Mark 1.00 out of 1.00

Which of the following option is correct?

In wireless distribution system

- a. only one access point exists
- b. access points are not required
- c. multiple access points are inter-connected with each other
- d. there is no access point

The correct answer is:

multiple access points are inter-connected with each other

Question 7

Complete

Mark 1.00 out of 1.00

Which layer is responsible for the process to process delivery in a general network model?

- a. transport layer
- b. network layer
- c. session layer
- d. data link layer

The correct answer is:

transport layer

Question 8

Complete

Mark 1.00 out of 1.00

Transmission data rate is decided by _____

- a. network layer
- b. data link layer
- c. physical layer
- d. transport layer

The correct answer is:

physical layer

Question 9

Complete

Mark 1.00 out of 1.00

There are n stations in a slotted LAN. Each station attempts to transmit with a probability p in each time slot. What is the probability that only one station transmits in a given time slot?

- a. $1-(1-p)^{(n-1)}$
- b. $(1-p)^{(n-1)}$
- c. $p(1-p)^{(n-1)}$
- d. $np(1-p)^{(n-1)}$

The correct answer is:

$np(1-p)^{(n-1)}$

Question 10

Complete

Mark 0.00 out of 1.00

Which multiple access techniques is used by Ethernet standards for wireless LANs

- a. CSMA
- b. CSMA/CD
- c. ALOHA
- d. CSMA/CA

The correct answer is:

CSMA/CD

[◀ Pre-Mid-Semester Exam_CS301 \(Section 1 + Section 2\)_19-08-2021_10.15 ti 11.15 AM](#)[Jump to...](#)

Started on Thursday, 28 October 2021, 4:21 PM

State Finished

Completed on Thursday, 28 October 2021, 4:28 PM

Time taken 7 mins 19 secs

Grade 8.00 out of 10.00 (80%)

Question 1

Complete

Mark 1.00 out of 1.00

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

- a. routing
- b. congestion control
- c. error control
- d. inter-networking

Question 2

Complete

Mark 0.00 out of 1.00

For a given subnet mask 255.128.0.0, what is the number of subnets?

- a. 8
- b. 2
- c. 4
- d. 6

Question 3

Complete

Mark 1.00 out of 1.00

In a given subnet mask 255.0.0.0, what is the number of Host ID bits?

- a. 21
- b. 24
- c. 12
- d. 221

Question 4

Complete

Mark 1.00 out of 1.00

In class C classful IPv4 addressing format, the number of networks allowed under Class C addresses is

- a. 2^{24}
- b. 2^7
- c. 2^{14}
- d. 2^{21}

Question 5

Complete

Mark 1.00 out of 1.00

Error control is responsibility of which OSI layers

- a. Network and Transport layer
- b. Physical and Data link layer
- c. All of these
- d. Data link and Transport layer

Question 6

Complete

Mark 1.00 out of 1.00

Which one of the following protocol is NOT used to resolve one form of address to another one?

- a. **DNS**
- b. **ARP**
- c. **RARP**
- d. **DHCP**

Question 7

Complete

Mark 1.00 out of 1.00

While configuring the router, the IP address assigned to one port is 201.14.2.1/23. LAN1 is attached to this port of the router. Which of the following IP addresses are valid on this LAN1 interface,

- I1: 201.14.1.100**
- I2: 201.14.1.3**
- I3: 201.14.2.2**
- I4: 201.14.3.0**

- a. Only I2 and I3
- b. Only I1 and I2
- c. Only I3 and I4
- d. Only I1 and I3

Question 8

Complete

Mark 0.00 out of 1.00

Find out the invalid subnet mask from the following

- a. **223.0.0.0**
- b. **None of these**
- c. **255.255.255.252**
- d. **255.240.0.0**

Question 9

Complete

Mark 1.00 out of 1.00

In the even parity, find the parity bit of data 1001001001.

- a. **1**
- b. **X**
- c. **0**
- d. **None of these**

Question 10

Complete

Mark 1.00 out of 1.00

In the IPV4 addressing format, the number of hosts allowed under Class A addresses

- a. **2^{32-2}**
- b. **2^{24-2}**
- c. **2^{16-2}**
- d. **2^{8-2}**

[◀ Continuous Assessment_12.11.2021_1.15pm to 1.30pm](#)

Jump to...

[Announcements ►](#)

Transmission data rate is decided by _____

- a. transport layer
- b. physical layer
- c. data link layer
- d. network layer

Feedback

The correct answer is:

physical layer

Question 2

Complete

Mark 1.00 out of 1.00

[Flag question](#)

Question text

What will be the propagation time when the distance between two points is 2400km? Assuming the propagation speed to be 4×10^8 m/s in cable

- a. 6ms
- b. 1ms
- c. 5ms
- d. 2ms

Feedback

The correct answer is:

6ms

Question 3

Complete

Mark 1.00 out of 1.00

Flag question

Question text

In reference to OSI model, TCP/IP model does not have _____

- a.
session layer
- b.
application layer
- c.
transport layer
- d.
application layer

Feedback

The correct answer is:

session layer

Question 4

Complete

Mark 1.00 out of 1.00

Flag question

Question text

- a.
- b.
- c.
- d.

Feedback

The correct answer is:

Question 5

Complete

Mark 1.00 out of 1.00

[Flag question](#)

Question text

The OSI model was developed ____ TCP/IP model.

a.

prior to

b.

simultaneous to

c.

after

d.

None of these

Feedback

The correct answer is:

after

Question 6

Complete

Mark 1.00 out of 1.00

[Flag question](#)

Question text

Which multiple access techniques is used by IEEE 802.11 standards for wireless LANs?

a.

CSMA/CA

b.

CSMA

c.

CSMA/CD

d.

ALOHA

Feedback

The correct answer is:

CSMA/CA

Question 7

Complete

Mark 1.00 out of 1.00

Flag question

Question text

The _____ layer links network/user support layers by segmenting and rearranging the data.

a.

application layer

b.

transport layer

c.

session Layer

d.

network layer

Feedback

The correct answer is:

transport layer

Question 8

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which multiple access techniques is used by Ethernet standards for wireless LANs

- a. ALOHA
- b. CSMA
- c. CSMA/CA
- d. CSMA/CD

Feedback

The correct answer is:

CSMA/CD

Question 9

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of the following option is correct?

In wireless distribution system

- a. access points are not required
- b. only one access point exists
- c. there is no access point
- d.

multiple access points are inter-connected with each other

Feedback

The correct answer is:

multiple access points are inter-connected with each other

Question 10

Complete

Mark 1.00 out of 1.00

[Flag question](#)

Question text

Which layer is responsible for the process to process delivery in a general network model?

a.

network layer

b.

session layer

c.

transport layer

d.

data link layer

Feedback

The correct answer is:

transport layer

Header of a frame generally contains

- a.
MAC addresses
- b.
All of these
- c.
Synchronization bytes
- d.
Frame identifier

Feedback

The correct answer is:

All of these

Question 2

Complete

Mark 1.00 out of 1.00

[Remove flag](#)

Question text

What is access points (AP) in a wireless LAN?

- a.
both device that allows wireless devices to connect to a wired network and wireless device itself
- b.
device that allows wireless devices to connect to a wired network
- c.
all nodes in the network
- d.
wireless device itself

Feedback

The correct answer is:

device that allows wireless devices to connect to a wired network

Question 3

Complete

Mark 3.00 out of 3.00

[Remove flag](#)

Question text

What are the propagation time and the transmission time for a 500kbyte message (an email) if the transmission rate of the network is 1Gbps? Assume that the distance between the sender and the receiver is 14000 km and that light travels at 2×10^8 m/s.



a.

7ms, 4ms



b.

7ms, 8ms



c.

8ms, 4ms



d.

8ms, 7ms

Feedback

The correct answer is:

7ms, 4ms

Question 4

Complete

Mark 0.00 out of 1.00

[Remove flag](#)

Question text

Which of the following statement is incorrect,

A shared broadcast media of transmission bandwidth 20 Mbps is shared by 100 users then,

a.

Using CDMA scheme, each of the users have an access to 200 Kbps of bandwidth

b.

Using FDMA scheme, each of the users have an access to 200 Kbps of bandwidth

c.

Using CDMA scheme, each of the users have an access to 20 Mbps of bandwidth

d.

Using TDMA scheme, each of the users have an access to 200 Kbps of bandwidth

Feedback

The correct answer is:

Using CDMA scheme, each of the users have an access to 200 Kbps of bandwidth

Question 5

Complete

Mark 1.00 out of 1.00

[Flag question](#)

Question text

Which sub-layer of the data link layer performs data link functions that depend upon the type of medium?

a.

Logical link control sub-layer

b.

network interface control sub-layer

c.

Media access control sub-layer

d.

error control sub-layer

Feedback

The correct answer is:
Media access control sub-layer

Question 6

Complete

Mark 3.00 out of 3.00

[Remove flag](#)

Question text

The message 11001001 is to be transmitted using CRC polynomial x^3+1 to protect it from errors. The message that should be transmitted after appending the CRC code with the original data is

a.

None of these

b.

1100001010

c.

1100001110

d.

1100001011

Feedback

The correct answer is:

None of these

Question 7

Complete

Mark 1.00 out of 1.00

[Flag question](#)

Question text

Which of the following task is not done by data link layer?

a.
Error control

b.
Flow control

c.
Framing

d.
Encoding

Feedback

The correct answer is:

Encoding

Question 8

Complete

Mark 1.00 out of 1.00

[Flag question](#)

Question text

Ethernet frame consists of

a.
IP address

b.
None of these

c.
Default mask

d.
MAC address

Feedback

The correct answer is:

MAC address

Question 9

Complete

Mark 1.00 out of 1.00

[Remove flag](#)

Question text

Communication between a computer and a speaker involves



a.
Simplex



b.
Half-duplex



c.
Automatic



d.
Full-duplex

Feedback

The correct answer is:

Simplex

Question 10

Complete

Mark 1.00 out of 1.00

[Flag question](#)

Question text

Transmission delay not depends upon

a.

Transmission rate

b.

Bandwidth of the medium

c.

Distance between routers

d.

Packet length

Feedback

The correct answer is:

Distance between routers

Question 11

Complete

Mark 1.00 out of 1.00

[Flag question](#)

Question text

What kind of transmission medium is most appropriate to carry data in a computer network that is exposed to electrical interference?

a.

Microwave link

b.

Coaxial cable

c.

Un-shielded twisted pair

d.

Optical fiber

Feedback

The correct answer is:

Optical fiber

Question 12

Complete

Mark 1.00 out of 1.00

[Flag question](#)**Question text**

Propagation delay depends on

a.
Packet length

b.
Transmission rate

c.
Speed of CPU

d.
Distance between routers

Feedback

The correct answer is:

Distance between routers

Question 13

Complete

Mark 1.00 out of 1.00

[Flag question](#)**Question text**

Which physical media provides the highest transmission speed in a network?

a.
optical fiber

b.
co-axial cable

c.
electrical cable

d.
twisted pair cable

Feedback

The correct answer is:
optical fiber

Question 14

Complete

Mark 2.00 out of 2.00

[Remove flag](#)

Question text

Suppose five clients are connected to five servers (making five pairs of client-server networks) through a common transmission channel of transmission rate 5 Mbps. All the server access links have a transmission rate of 4 Mbps and all the client access links have a transmission rate of 2 Mbps, the throughput of this network will be

- a.
2 Mbps
- b.
5 Mbps
- c.
1 Mbps
- d.
None of these

Feedback

The correct answer is:
1 Mbps

Question 15

Complete

Mark 2.00 out of 2.00

[Remove flag](#)

Question text

A shared broadcast medium of transmission rate 5 Mbps is being shared by 10 users (U1, U2,U10). Calculate the maximum transmission rate of each of the users if the channel access scheme used is FDMA. If instead of FDMA the scheme being used is CDMA then what will be the maximum transmission rate of each of the users?

a.

None of these

b.

5000 Kbps, 5000 Kbps

c.

500 Kbps, 5000 Kbps

d.

50 Mbps, 5 Mbps

Feedback

The correct answer is:

500 Kbps, 5000 Kbps

Question 16

Complete

Mark 1.00 out of 1.00

[Flag question](#)

Question text

Which of the following is link layer protocol

a.

PPP (point-to-point protocol)

b.

HDLC (High Level Data Link control)

c.

All of these

d.

Ethernet

Feedback

The correct answer is:

All of these

Question 17

Complete

Mark 1.00 out of 1.00

Flag question

Question text

In link layer, parity bits are used for



a.
to detect errors



b.
to transmit data faster



c.
encryption of data



d.
to identify the user

Feedback

The correct answer is:

to detect errors

Question 18

Complete

Mark 1.00 out of 1.00

Flag question

Question text

In computer networks nodes are....

- a.
the computer that terminates the data
- b.
All of these
- c.
the computer that routes the data
- d.
the computer that originates/generates the data

Feedback

The correct answer is:

All of these

Question 19

Complete

Mark 1.00 out of 1.00

[Flag question](#)

Question text

Optical Network Terminator is connected to splitter using _____

- a.
hybrid fiber co-axial cable
- b.
Optical cable
- c.
microwave link
- d.
Twisted pair cable

Feedback

The correct answer is:

Optical cable

Question 20

Complete

Mark 1.00 out of 1.00

Flag question

Question text

The sharing of medium and its links by two or more devices is called



a.
Fully duplexing



b.
Microplexing



c.
Multiplexing



d.
Duplexing

Feedback

The correct answer is:

Multiplexing

Question 21

Complete

Mark 1.00 out of 1.00

Flag question

Question text

A landline telephone network is an example of..... network.



a.
Packet switched



b.

Line switched

c.

Both packet switched and circuit switched

d.

Circuit switched

Feedback

The correct answer is:

Circuit switched

Question 22

Complete

Mark 0.00 out of 1.00

[Remove flag](#)

Question text

Which is not true for Packet switching?

a.

A dedicated path is followed throughout the session.

b.

Installation costs of packet switching are expensive.

c.

Multiple users can use the same channel while transferring their packets.

d.

The delivery of these packets becomes easy when complicated protocols are used.

Feedback

The correct answer is:

A dedicated path is followed throughout the session.

Question 23

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Bluetooth is a wireless technology for

- a.
LAN (Local Area Network)
- b.
WAN (Wide Area Network)
- c.
MAN (Metropolitan Area Network)
- d.
PAN (Personal Area Network)

Feedback

The correct answer is:

PAN (Personal Area Network)

Question 24

Complete

Mark 0.00 out of 1.00

Remove flag

Question text

Which is true for circuit switching?

- a.
All of these
- b.
The bandwidth used is not constant.
- c.
The rate at which the data is transmitted is constant.
- d.

While switching, time is wasted in waiting.

Feedback

The correct answer is:

The rate at which the data is transmitted is constant.

NOTE : Wrong answer are highlighted in RED TEXT

Question 1

Complete

Mark 1.00 out of 1.00

Question text

Which of the following is incorrect about Network Address Translation?

a.

NAT is a process in which one or more local IP address is translated into one or more Global IP address and vice versa.

b.

Certain application will not function while NAT is enabled.

c.

Router will do NAT translation without configuration.

d.

NAT results in switching path delays.

Question 2

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of the following is true for Address Resolution Protocol (ARP)?

a.

ARP request is unicast and ARP reply is broadcast.

b.

ARP request is unicast and ARP reply is also unicast.

c.

ARP request is broadcast and ARP reply is unicast.

d.

ARP request is broadcast and ARP reply is also broadcast.

Question 3

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which fields helps to check rearrangement of the fragments in IPV4?

a.

Flags

b.

Checksum

c.

Fragment Offset

d.

Protocol field value

Question 4

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of these is not a type of error-reporting message?

a.

Router error

b.

Destination unreachable

c.

Source quench

d.

Time exceeded

Question 5

Complete

Mark 0.00 out of 1.00

Flag question

Question text

The well-known port addresses are assigned to the

a.

Destination

b.

None of these

c.

Routers

d.

Source

Question 6

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Fragmentation is done in layer.

a.

Physical layer

b.

Transport Layer

c.

Data link Layer

d.

Network Layer

Question 7

Complete

Mark 0.00 out of 1.00

Flag question

Question text

In an IPV4 packet, the value of HLEN is 1010 in binary. How many bytes of options are being carried by this packet?

a.

12 bytes

b.

10 bytes

c.

32 bytes

d.

20 bytes

Question 8

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Routing inside a single administrative domain is called as..... routing.

a.

Inter-domain

b.

Path Vector

c.

Intra-domain

d.

None of these

Question 9

Complete

Mark 1.00 out of 1.00

Flag question

Question text

A email service uses which one of the following transport layer protocol?

a.

TCP

b.

Both TCP and UDP

c.

HTTP

d.

UDP

Question 10

Complete

Mark 1.00 out of 1.00

Flag question

Question text

The traffic field of IPV6 is similar to which field in the IPV4 header?

a.

Type of service

b.

Option field

c.

Fragmentation field

d.

Fast switching

Question 1

Complete

Mark 1.00 out of 1.00

Flag question

Question text

In the IPV4 addressing format, the number of hosts allowed under Class A addresses

a.

$2^{16}-2$

b.

$2^{8}-2$

c.

$2^{24}-2$

d.

$2^{32}-2$

Question 2

Complete

Mark 0.00 out of 1.00

Flag question

Question text

For a given subnet mask 255.128.0.0, what is the number of subnets?

a.

8

b.

2

c.

4

d.

6

Question 3

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Error control is responsibility of which OSI layers

a.

Data link and Transport layer

b.

Network and Transport layer

c.

Physical and Data link layer

d.

All of these

Question 4

Complete

Mark 0.00 out of 1.00

Flag question

Question text

While configuring the router, the IP address assigned to one port is 201.14.2.1/23. LAN1 is attached to this port of the router. Which of the following IP addresses are valid on this LAN1 interface,

I1: 201.14.1.100

I2: 201.14.1.3

I3: 201.14.2.2

I4: 201.14.3.0

a.

Only I2 and I3

b.

Only I1 and I2

c.

Only I1 and I3

d.

Only I3 and I4

Question 5

Complete

Mark 1.00 out of 1.00

Flag question

Question text

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

a.

inter-networking

b.

congestion control

c.

error control

d.

routing

Question 6

Complete

Mark 1.00 out of 1.00

Flag question

Question text

In class C classful IPv4 addressing format, the number of networks allowed under Class C addresses is

a.

2^{24}

b.

2^{14}

c.

2^7

d.

2^{21}

Question 7

Complete

Mark 1.00 out of 1.00

Flag question

Question text

In a given subnet mask 255.0.0.0, what is the number of Host ID bits?

a.

24

b.

12

c.

221

d.

21

Question 8

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which one of the following protocol is NOT used to resolve one form of address to another one?

a.

RARP

b.

ARP

c.

DNS

d.

DHCP

Question 9

Complete

Mark 1.00 out of 1.00

Flag question

Question text

In the even parity, find the parity bit of data 1001001001.

a.

0

b.

X

c.

1

d.

None of these

Question **10**

Complete

Mark 1.00 out of 1.00

Question text

Find out the invalid subnet mask from the following

a.

None of these

b.

255.255.255.252

c.

223.0.0.0

d.

255.240.0.0

[Dashboard](#) / [Courses](#) / [Autumn 2022-23](#) / [BTech - CSE/ IT Semester 5](#) / [CS301 2022](#) / [General](#)

/ [QUIZ 3_CS301 \(Section 1 + Section 2\)_04-11-2022_11.00 PM to 11.15 PM](#)

Started on Friday, 4 November 2022, 11:00 AM

State Finished

Completed on Friday, 4 November 2022, 11:14 AM

Time taken 14 mins 52 secs

Grade **12.00** out of 15.00 (80%)

Question **1**

Complete

Mark 1.00 out of 1.00

If the value in protocol field is 2 in IPV4 header, the protocol used is.....?

- a. ICMP
- b. TCP
- c. UDP
- d. IGMP

Question **2**

Complete

Mark 1.00 out of 1.00

What should be the flag value to indicate the last fragment?

- a. Time to live value
- b. M = 1
- c. None of these
- d. M = 0

Question 3

Complete

Mark 1.00 out of 1.00

The traffic field of IPV6 is similar to which field in the IPV4 header?

- a. Option field
- b. Fragmentation field
- c. Type of service
- d. Fast switching

Question 4

Complete

Mark 1.00 out of 1.00

What is the network address of the subnet which contains a host with the IP address 192.168.12.198 with subnet mask 255.255.255.0?

- a. 192.168.0.0
- b. 192.168.12.12
- c. 192.168.12.0
- d. 192.168.12.255

Question 5

Complete

Mark 1.00 out of 1.00

Which fields helps to check rearrangement of the fragments in IPV4?

- a. Flags
- b. Checksum
- c. Fragment Offset
- d. Protocol field value

Question 6

Complete

Mark 1.00 out of 1.00

Consider three devices A, B, and C with IP addresses 100.10.5.2, 100.10.5.5 and 100.10.5.6 respectively. The subnet mask is set to 255.255.255.252 for all the three devices. Which one of the following is true?

- a. Only A and B belong to same subnet
- b. A, B, and C all belongs to three different subnets
- c. A, B, and C all belongs to the same subnet
- d. only B and C belongs to same subnet

Question 7

Complete

Mark 0.00 out of 1.00

Which of the following is incorrect about NAT?

- a. Static Nat creates affixed translation of private addresses to public addresses.
- b. NAT does not conserve IPV4 addresses.
- c. NAT helps to reuse private IP addresses.
- d. Static NAT allows the user to configure one-to-one translation.

Question 8

Complete

Mark 0.00 out of 1.00

Suppose the IP address of device **1** is 10.10.36.1 and device **2** is 10.10.12.1 and the subnet mask used is 255.255.0.0. Both the devices will be able to communicate with each other using

- a. None of these
- b. Router
- c. Switch
- d. Hub

Question 9

Complete

Mark 1.00 out of 1.00

Two popular routing tables are Distance Vector and Link State routing, which of the following are true?

1. count-to-infinity is a problem only in distance vector and not in link state routing.
2. In link state, the shortest path algorithm is run only at one node.
3. In distance vector, the shortest path algorithm is run only at one node.
4. Distance vector requires fewer number of network messages than link state.

- a. 1, 2 and 4 only
- b. 1, 3, and 4 only
- c. 2 and 3 only
- d. 1 and 4 only

Question 10

Complete

Mark 1.00 out of 1.00

In an IPv4 packet, the value of HLEN is 1010 in binary. How many bytes of options are being carried by this packet?

- a. 12 bytes
- b. 20 bytes
- c. 10 bytes
- d. 32 bytes

Question 11

Complete

Mark 1.00 out of 1.00

The following is a dump of a UDP header in hexadecimal format

0632000D001EE217

What is the total length of the datagram?

- a. 22 bits
- b. 22 bytes
- c. 8 bytes
- d. 20 bytes

Question 12

Complete

Mark 0.00 out of 1.00

An organization is granted the block 130.34.12.64/26. Find the maximum number of host addresses that can be assigned for this network?

- a. 32
- b. 18
- c. 256
- d. None of these

Question 13

Complete

Mark 1.00 out of 1.00

Which of these is not a type of error-reporting message?

- a. Source quench
- b. Router error
- c. Time exceeded
- d. Destination unreachable

Question 14

Complete

Mark 1.00 out of 1.00

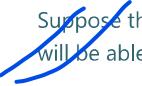
What is the type of the destination address of these Ethernet address 4A:30:10:21:10:1A

- a. Broadcast
- b. Not a valid address
- c. Multicast
- d. Unicast

Question 15

Complete

Mark 1.00 out of 1.00

 Suppose the IP address of device **1** is 162.198.2.1 and device **2** is 162.198.3.2 and the subnet mask used is 255.255.255.0. Both the devices will be able to communicate with each other using switch

- a. True
- b. False

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/ [QUIZ 3_CS301 \(Section 1 + Section 2\)_04-11-2022_11.00 PM to 11.15 PM](#)

Started on Friday, 4 November 2022, 11:00 AM

State Finished

Completed on Friday, 4 November 2022, 11:14 AM

Time taken 14 mins 52 secs

Grade **12.00** out of 15.00 (80%)

Question **1**

Complete

Mark 1.00 out of 1.00

If the value in protocol field is 2 in IPV4 header, the protocol used is.....?

- a. ICMP
- b. TCP
- c. UDP
- d. IGMP

Question **2**

Complete

Mark 1.00 out of 1.00

What should be the flag value to indicate the last fragment?

- a. Time to live value
- b. M = 1
- c. None of these
- d. M = 0

Question 3

Complete

Mark 1.00 out of 1.00

The traffic field of IPV6 is similar to which field in the IPV4 header?

- a. Option field
- b. Fragmentation field
- c. Type of service
- d. Fast switching

Question 4

Complete

Mark 1.00 out of 1.00

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- a. 192.168.0.0
- b. 192.168.12.12
- c. 192.168.12.0
- d. 192.168.12.255

Question 5

Complete

Mark 1.00 out of 1.00

Which fields helps to check rearrangement of the fragments in IPV4?

- a. Flags
- b. Checksum
- c. Fragment Offset
- d. Protocol field value

Question 6

Complete

Mark 1.00 out of 1.00

Consider three devices A, B, and C with IP addresses 100.10.5.2, 100.10.5.5 and 100.10.5.6 respectively. The subnet mask is set to 255.255.255.252 for all the three devices. Which one of the following is true?

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- b. A, B, and C all belongs to three different subnets
- c. A, B, and C all belongs to the same subnet
- d. only B and C belongs to same subnet

Question 7

Complete

Mark 0.00 out of 1.00

Which of the following is incorrect about NAT?

- a. Static Nat creates affixed translation of private addresses to public addresses.
- b. NAT does not conserve IPV4 addresses.
- c. NAT helps to reuse private IP addresses.
- d. Static NAT allows the user to configure one-to-one translation.

Question 8

Complete

Mark 0.00 out of 1.00

Suppose the IP address of device **1** is 10.10.36.1 and device **2** is 10.10.12.1 and the subnet mask used is 255.255.0.0. Both the devices will be able to communicate with each other using

- a. None of these
- b. Router
- c. Switch
- d. Hub

Question 9

Complete

Mark 1.00 out of 1.00

Two popular routing tables are Distance Vector and Link State routing, which of the following are true?

1. count-to-infinity is a problem only in distance vector and not in link state routing.
2. In link state, the shortest path algorithm is run only at one node.
3. In distance vector, the shortest path algorithm is run only at one node.
4. Distance vector requires fewer number of network messages than link state.

- a. 1, 2 and 4 only
- b. 1, 3, and 4 only
- c. 2 and 3 only
- d. 1 and 4 only

Question 10

Complete

Mark 1.00 out of 1.00

In an IPv4 packet, the value of HLEN is 1010 in binary. How many bytes of options are being carried by this packet?

- a. 12 bytes
- b. 20 bytes
- c. 10 bytes
- d. 32 bytes

Question 11

Complete

Mark 1.00 out of 1.00

The following is a dump of a UDP header in hexadecimal format

0632000D001EE217

What is the total length of the datagram?

- a. 22 bits
- b. 22 bytes
- c. 8 bytes
- d. 20 bytes

Question 12

Complete

Mark 0.00 out of 1.00

An organization is granted the block 130.34.12.64/26. Find the maximum number of host addresses that can be assigned for this network?

- a. 32
- b. 18
- c. 256
- d. None of these

Question 13

Complete

Mark 1.00 out of 1.00

Which of these is not a type of error-reporting message?

- a. Source quench
- b. Router error
- c. Time exceeded
- d. Destination unreachable

Question 14

Complete

Mark 1.00 out of 1.00

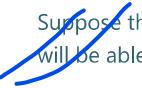
What is the type of the destination address of these Ethernet address 4A:30:10:21:10:1A

- a. Broadcast
- b. Not a valid address
- c. Multicast
- d. Unicast

Question 15

Complete

Mark 1.00 out of 1.00

 Suppose the IP address of device **1** is 162.198.2.1 and device **2** is 162.198.3.2 and the subnet mask used is 255.255.255.0. Both the devices will be able to communicate with each other using switch

- a. True
- b. False

Jump to...

[Announcements ►](#)

Started on Monday, 18 December 2023, 4:25 PM

State Finished

Completed on Monday, 18 December 2023, 4:35 PM

Time taken 9 mins 8 secs

Question 1

Complete

Marked out of 1.00

Find out the invalid subnet mask from the following

- a. 223.0.0.0
- b. None of these
- c. 255.255.255.252
- d. 255.240.0.0

Question 2

Complete

Marked out of 1.00

Which of the following describe the process identifier that is used to run OSPF on a router?

- A. It is globally significant.
- B. It is locally significant.
- C. It is needed to identify a unique instance of an OSPF database.
- D. It is an optional parameter required only if multiple OSPF processes are running on the router.

Select one:

- B and C
- A and C
- A and D
- B and D

Question 3

Complete

Marked out of 1.00

Transmission data rate is decided by _____

- a. data link layer
- b. transport layer
- c. physical layer
- d. network layer

...

Question 4

Complete

Marked out of 1.00

Which of the following is not a limitation of IPV4 addresses?

- a. IPV4 fits for small topology drawing
- b. IPV4 lacks end-to-end connectivity
- c. IPV4 suffers from IP address depletion
- d. IPV4 cannot handle internet routing table expansion

Question 5

Complete

Marked out of 1.00

Dynamic Host Configuration Protocol is used for

- a. both IPV4 and IPV6
- b. None of these
- c. IPV6
- d. IPV4

Question 6

Complete

Marked out of 1.00

In reference to OSI model, TCP/IP model does not have _____

- a. session layer
- b. transport layer
- c. application layer
- d. application layer

...

Question 7

Complete

Marked out of 1.00

For a given subnet mask 255.128.0.0, what is the number of subnets?

- a. 6
- b. 8
- c. 2
- d. 4

Question 8

Complete

Marked out of 1.00

In a given subnet mask 255.0.0.0, what is the number of Host ID bits?

- a. 221
- b. 21
- c. 12
- d. 24

Question 9

Complete

Marked out of 1.00

Routing inside a single administrative domain is called as..... routing.

- a. Path Vector
- b. None of these
- c. Inter-domain
- d. Intra-domain

**Question 10**

Complete

Marked out of 1.00

Which of the following is incorrect about Network Address Translation?

- a. Certain application will not function while NAT is enabled.
- b. NAT is a process in which one or more local IP address is translated into one or more Global IP address and vice versa.
- c. Router will do NAT translation without configuration.
- d. NAT results in switching path delays.

Question 11

Complete

Marked out of 1.00

The traffic field of IPV6 is similar to which field in the IPV4 header?

- a. Type of service
- b. Option field
- c. Fragmentation field
- d. Fast switching

Question 12

Complete

Marked out of 1.00

The sharing of medium and its links by two or more devices is called

- a. Duplexing
- b. Fully duplexing
- c. Microplexing
- d. Multiplexing

...

Question 13

Complete

Marked out of 1.00

A email service uses which one of the following transport layer protocol?

- a. TCP
- b. HTTP
- c. UDP
- d. Both TCP and UDP

Question 14

Complete

Marked out of 1.00

In link layer, parity bits are used for

- a. to transmit data faster
- b. to detect errors
- c. encryption of data
- d. to identify the user

Question 15

Complete

Marked out of 1.00

Layer that translates between physical (MAC) and logical addresses is

- a. Datalink
- b. Physical
- c. Transport
- d. Network

Question 16

Complete

Marked out of 1.00

Which of the following is incorrect about Network Address Translation?

- a. Certain application will not function while NAT is enabled.
- b. Router will do NAT translation without configuration.
- c. NAT results in switching path delays.
- d. NAT is a process in which one or more local IP address is translated into one or more Global IP address and vice versa.

Question 17

Complete

Marked out of 1.00

Which multiple access techniques is used by IEEE 802.11 standards for wireless LANs?

- a. CSMA/CD
- b. ALOHA
- c. CSMA
- d. CSMA/CA

Question 18

Complete

Marked out of 1.00

The time required to examine the packet's header and determine where to direct the packet is part of _____

- a. Transmission delay
- b. Processing delay
- c. Propagation delay
- d. Queuing delay

...

Question 19

Complete

Marked out of 1.00

Which fields helps to check rearrangement of the fragments in IPV4?

- a. Fragment Offset
- b. Protocol field value
- c. Flags
- d. Checksum

Question 20

Complete

Marked out of 1.00

The maximum size of payload field in Ethernet frame is

- a. 1300 bytes
 - b. 1000 bytes
 - c. 1500 bytes
 - d. 1200 bytes
- bytes
bytes
bytes
bytes

[◀ CS301_Quiz1_23.11.2023](#)



Started on Thursday, 23 November 2023, 4:30 PM

State Finished

Completed on Thursday, 23 November 2023, 4:52 PM

Time taken 21 mins 53 secs

Question **1**

Complete

Marked out of 1.00

Which of the following is true for Address Resolution Protocol (ARP)?

- a. ARP request is broadcast and ARP reply is also broadcast.
- b. ARP request is broadcast and ARP reply is unicast.
- c. ARP request is unicast and ARP reply is broadcast.
- d. ARP request is unicast and ARP reply is also unicast.

Question **2**

Complete

Marked out of 1.00

Which address identifies a process on a host?

- a. specific address
- b. logical address
- c. port address
- d. physical address

Question 3

Complete

Marked out of 1.00

What is the Hexadecimal equivalent of the following Ethernet address

010110100010001010101000110001010101000001111

- a. 5A115518AA0F
- b. 5A1155189A0E
- c. None of these
- d. 5A115514AA0F

Question 4

Complete

Marked out of 1.00

The number of bits in IPV4 address, IPV6 address, MAC address and Port address are

- a. 128, 32, 48, 16
- b. 32, 128, 64, 16
- c. 32, 128, 48, 16
- d. 32, 128, 48, 32

Question 5

Complete

Marked out of 1.00

Communication between a computer and a speaker involves

- a. Automatic
- b. Full-duplex
- c. Simplex
- d. Half-duplex

Question 6

Complete

Marked out of 1.00

The maximum size of payload field in Ethernet frame is

- a. 1500 bytes
- b. 1200 bytes
- c. 1000 bytes
- d. 1300 bytes

Question 7

Complete

Marked out of 1.00

Which of the following statement is incorrect,

A shared broadcast media of transmission bandwidth 20 Mbps is shared by 100 users then,

- a. Using CDMA scheme, each of the users have an access to 200 Kbps of bandwidth
- b. Using CDMA scheme, each of the users have an access to 20 Mbps of bandwidth
- c. Using FDMA scheme, each of the users have an access to 200 Kbps of bandwidth
- d. Using TDMA scheme, each of the users have an access to 200 Kbps of bandwidth

Question 8

Complete

Marked out of 1.00

Which of the following delay is faced by the packet in travelling from one end system to another?

- a. Queuing delay
- b. Transmission delay
- c. All of these
- d. Propagation delay

Question 9

Complete

Marked out of 1.00

Find out the invalid subnet mask from the following

- a. None of these
- b. 255.255.255.252
- c. 255.255.242.0
- d. 255.240.0.0

Question 10

Complete

Marked out of 1.00

Which of the following is a set of rules that governs the data communication in a computer network

- a. RFCs
- b. None of these
- c. Activity standards
- d. Protocols

Question 11

Complete

Marked out of 1.00

Header of a frame generally contains

- a. MAC addresses
- b. All of these
- c. Frame identifier
- d. Synchronization bytes

Question 12

Complete

Marked out of 1.00

Which one is a valid subnet mask out of the following?

- a. 223.0.0.0
- b. 240.0.0.0
- c. None of these
- d. 255.230.255.0

Question 13

Complete

Marked out of 1.00

What is the class of this IPv4 address **11101111 11110111 11000111 00011101**?

- a. class B
- b. class C
- c. class A
- d. class D

Question 14

Complete

Marked out of 1.00

Transmission rate is decided by

- a. network layer
- b. physical layer
- c. data link layer
- d. transport layer

Question 15

Complete

Marked out of 1.00

The sharing of medium and its links by two or more devices is called

- a. Duplexing
- b. Multiplexing
- c. Microplexing
- d. Fully duplexing

Question 16

Complete

Marked out of 1.00

In link layer, parity bits are used for

- a. to transmit data faster
- b. to identify the user
- c. to detect errors
- d. encryption of data

Question 17

Complete

Marked out of 1.00

Ethernet frame consists of

- a. None of these
- b. IP address
- c. Default mask
- d. MAC address

Question 18

Complete

Marked out of 1.00

The function of Digital Subscriber Line Access Multiplexer is to _____

- a. Convert digital signals into analog signals
- b. Amplify digital signals
- c. De-amplify digital signals
- d. Convert analog signals into digital signals

Question 19

Complete

Marked out of 1.00

Which of the following task is not done by data link layer?

- a. Framing
- b. Error control
- c. Flow control
- d. Encoding

Question 20

Complete

Marked out of 1.00

Which physical media provides the highest transmission speed in a network?

- a. twisted pair cable
- b. optical fiber
- c. electrical cable
- d. co-axial cable

Question 21

Complete

Marked out of 1.00

Define the type of this Ethernet frame destination address **FF:FF:FF:FF:FF:FF**

- a. None of these
- b. Unicast
- c. Multicast
- d. Broadcast

Question 22

Complete

Marked out of 1.00

In computer networks nodes are....

- a. the computer that routes the data
- b. the computer that terminates the data
- c. the computer that originates/generates the data
- d. All of these

Question 23

Complete

Marked out of 1.00

What is access points (AP) in a wireless LAN?

- a. both device that allows wireless devices to connect to a wired network and wireless device itself
- b. all nodes in the network
- c. wireless device itself
- d. device that allows wireless devices to connect to a wired network

Question 24

Complete

Marked out of 1.00

Which of the following is link layer protocol

- a. PPP (point-to-point protocol)
- b. HDLC (High Level Data Link control)
- c. All of these
- d. Ethernet

Question 25

Complete

Marked out of 1.00

Which sub-layer of the data link layer performs data link functions that depend upon the type of medium?

- a. network interface control sub-layer
- b. Logical link control sub-layer
- c. error control sub-layer
- d. Media access control sub-layer

Question 26

Complete

Marked out of 1.00

The size of an IP address in IPV6 is.....

- a. 128 bytes
- b. 60 bits
- c. 128 bits
- d. 40bytes

Question 27

Complete

Marked out of 1.00

Which is not true for Packet switching?

- a. The delivery of these packets becomes easy when complicated protocols are used.
- b. Multiple users can use the same channel while transferring their packets.
- c. Installation costs of packet switching are expensive.
- d. A dedicated path is followed throughout the session.

Question 28

Complete

Marked out of 1.00

What is default subnet mask address of this IPV4 address **11001111 11110111 11000111 00011101**?

- a. 255.255.255.255
- b. 255.0.0.0
- c. 255.255.0.0
- d. 255.255.255.0

Question 29

Complete

Marked out of 1.00

Which of the following is not a valid IP address?

- a. 192.25.256.8
- b. 145.6.14.1
- c. 145.6.14.8
- d. 192.168.2.1

Question 30

Complete

Marked out of 1.00

Which is true for circuit switching?

- a. While switching, time is wasted in waiting.
- b. All of these
- c. The rate at which the data is transmitted is constant.
- d. The bandwidth used is not constant.

Question 31

Complete

Marked out of 1.00

What is default subnet mask address of this IPV4 address **172.15.165.1**?

- a. 255.0.0.0
- b. 255.255.255.255
- c. 255.255.255.0
- d. 255.255.0.0

Question 32

Complete

Marked out of 1.00

Optical Network Terminator is connected to splitter using _____

- a. hybrid fiber co-axial cable
- b. Twisted pair cable
- c. microwave link
- d. Optical cable

Question 33

Complete

Marked out of 1.00

A landline telephone network is an example of..... network.

- a. Circuit switched
- b. Line switched
- c. Packet switched
- d. Both packet switched and circuit switched

Question 34

Complete

Marked out of 1.00

Propagation delay depends on

- a. Distance between routers
- b. Transmission rate
- c. Speed of CPU
- d. Packet length

Question 35

Complete

Marked out of 1.00

In class C classful IPv4 addressing format, the number of networks allowed under Class C addresses is

- a. 2^{24}
- b. 2^{21}
- c. 2^7
 2^7
- d. 2^{14}

Question 36

Complete

Marked out of 1.00

What kind of transmission medium is most appropriate to carry data in a computer network that is exposed to electrical interference?

- a. Optical fiber
- b. Coaxial cable
- c. Microwave link
- d. Un-shielded twisted pair

Question 37

Complete

Marked out of 1.00

Transmission delay not depends upon

- a. Distance between routers
- b. Bandwidth of the medium
- c. Packet length
- d. Transmission rate

◀ Mid-Semester Exam_CS301 (GNR+Diu)_06-11-2023_9.30 AM to 11.30 AM

Jump to...

Started on Friday, 22 December 2023, 9:00 AM

State Finished

Completed on Friday, 22 December 2023, 11:15 AM

Time taken 2 hours 15 mins

Grade **92.00** out of 100.00

Question **1**

Complete

Mark 1.00 out of 1.00

A landline telephone network is an example of..... network.

- a. Line switched
- b. Both packet switched and circuit switched
- c. Packet switched
- d. Circuit switched

The correct answer is:

Circuit switched

Question **2**

Complete

Mark 1.00 out of 1.00

Electronic mail uses which Application layer protocol?

- a. FTP
- b. SMTP
- c. SIP
- d. HTTP

The correct answer is:

SMTP

Question 3

Complete

Mark 1.00 out of 1.00

What is the correct order of the operation of open shortest path first algorithm?

- i. Establishing adjacencies and synchronization of database
- ii. Hello packet
- iii. Propagation of link state information and building of routing tables

- a. i-ii-iii
- b. ii-iii-i
- c. iii-ii-i
- d. ii-i-iii

The correct answer is:

ii-i-iii

Question 4

Complete

Mark 1.00 out of 1.00

Which of the following statement(s) is /are true about TCP?

- (i) TCP is connection oriented protocol
- (ii) TCP uses a three way handshake to establish a connection
- (iii) TCP receives data from application as a single stream

- a. (i), (ii) and (iii)
- b. (i) only
- c. (i) and (ii) only
- d. (i) and (iii) only

The correct answer is:

(i), (ii) and (iii)



Question 5

Complete

Mark 1.00 out of 1.00

The number of bits in IPV4 address, IPV6 address, MAC address and Port address are

- a. 32, 128, 48, 16
- b. 32, 128, 64, 16
- c. 128, 32, 48, 16
- d. 32, 128, 48, 32

The correct answer is:

32, 128, 48, 16

Question 6

Complete

Mark 1.00 out of 1.00

Which of the following protocol is not used to resolve one form of addressing to another one?

- a. Address Resolution Protocol
- b. Dynamic Host Configuration Protocol
- c. Reverse Address Resolution Protocol
- d. Domain Name System

The correct answer is:

Dynamic Host Configuration Protocol

Question 7

Complete

Mark 1.00 out of 1.00

Which layer is responsible for the process to process delivery in a general network model?

- a. session layer
- b. transport layer
- c. network layer
- d. data link layer

The correct answer is:

transport layer

Question 8

Complete

Mark 1.00 out of 1.00

Which of the following routing algorithms can be used for network layer design?

- a. link state routing
- b. All of these
- c. shortest path algorithm
- d. distance vector routing

The correct answer is:

All of these

Question 9

Complete

Mark 1.00 out of 1.00

Which are end system devices

- a. smartphones
- b. web servers
- c. mail servers
- d. All of these

The correct answer is:

All of these



Question 10

Complete

Mark 1.00 out of 1.00

Which of the following protocols is the bit-oriented protocol?

 a. HTTP b. All of the these c. SSL d. HDLC

The correct answer is:

HDLC

Question 11

Complete

Mark 0.00 out of 1.00

An organization follows Class C for their internal network. One of the host in the organization has an IP address 162.198.20.1. What will be the number of possible network addresses and host addresses? What will the broadcast address of the network?

 a. Network addresses 16384, Host addresses 65534, Broadcast address 162.198.255.255 b. Network addresses 2097150, Host addresses 256, Broadcast address 162.198.20.255 c. Network addresses 2097152, Host addresses 254, Broadcast address 162.198.20.255 d. Network addresses 2097152, Host addresses 254, Broadcast address 162.198.255.255

The correct answer is:

Network addresses 2097152, Host addresses 254, Broadcast address 162.198.20.255

Question 12

Complete

Mark 1.00 out of 1.00

The sender employs the "Go Back 10 ARQ" scheme. A 50 Kbps link has a propagation speed of 2×10^8 m/s. The transmitter and receiver is at 2000 km distance from each other. Each frame is 100 bytes long, assuming no transmission delay what will be the minimum round trip time delay for transmission of 1 million bits?

- a. 50 ms
- b. None of these
- c. 20 ms



- d. 10 ms

The correct answer is:

20 ms

Question 13

Complete

Mark 1.00 out of 1.00

The _____ layer links network/user support layers by segmenting and rearranging the data.

- a. network layer
- b. application layer
- c. session Layer
- d. transport layer

The correct answer is:

transport layer

Question 14

Complete

Mark 1.00 out of 1.00

What does a network switch do when it receives a frame with a destination MAC address that is not in its MAC address table?

- a. Drops the frame
- b. Initiates MAC address aging
- c. Forwards the frame only to the source port
- d. Floods the frame to all ports

The correct answer is:

Floods the frame to all ports



Question 15

Complete

Mark 1.00 out of 1.00

The computation of the shortest path first in OSPF is usually done by

- a. Kruskal's algorithm
- b. Bellman Ford algorithm
- c. Vector algorithm
- d. Dijkstra's algorithm

The correct answer is:

Dijkstra's algorithm

Question 16

Complete

Mark 1.00 out of 1.00

A 50 Kbps satellite link has a propagation delay of 500 ms. The transmitter employs the "Go Back 16 ARQ" scheme. Assuming that each frame is 200 bytes long, what is the maximum data rate possible?

- a. 248 bps
- b. 2.48 Mbps
- c. None of these
- d. 2.48 Kbps

The correct answer is:

2.48 Kbps

Question 17

Complete

Mark 0.00 out of 1.00

Which one of the following uses UDP as the transport protocol?

- a. Telnet
- b. HTTP
- c. SMTP
- d. DNS

The correct answer is:

DNS

Question 18

Complete

Mark 1.00 out of 1.00

If a class B network on the internet has a subnet mask of 255.255.248.0, what is the maximum number of hosts per subnet?

- a. Network addresses 16384, Host addresses 65534, Broadcast address 162.255.255.255
- b. Network addresses 65536, Host addresses 65534, Broadcast address 255.255.255.255
- c. Network addresses 16384, Host addresses 65534, Broadcast address 255.255.255.255
- d. Network addresses 16384, Host addresses 65536, Broadcast address 162.255.255.255

The correct answer is:

Network addresses 16384, Host addresses 65534, Broadcast address 162.255.255.255



Question 19

Complete

Mark 1.00 out of 1.00

EUI-64 process is a method we can use to automatically configure IPV6 host addresses.

- a. False
- b. True

The correct answer is:

True

Question 20

Complete

Mark 0.00 out of 1.00

What is the type of the destination address of these Ethernet address **47:30:10:21:10:1A**

- a. Broadcast
- b. Not a valid address
- c. Unicast
- d. Multicast

The correct answer is:

Multicast

Question 21

Complete

Mark 1.00 out of 1.00

What will be the propagation time when the distance between two points is 2400km?Assuming the propagation speed to be 4×10^8 m/s in cable

- a. 5ms
- b. 1ms
- c. 6ms
- d. 2ms

The correct answer is:

6ms

Question 22

Complete

Mark 1.00 out of 1.00

To avoid collisions on wireless networks, _____ was invented.

- a. None of these
- b. CSMA/CD
- c. CSMA/CA
- d. Ethernet

The correct answer is:

CSMA/CA

Question 23

Complete

Mark 1.00 out of 1.00

Consider three devices A, B, and C with IP addresses 10.105.1.30, 10.105.1.33 and 10.105.1.34 respectively. The subnet mask is set to 255.255.255.224 for all the three devices. Which one of the following is true?

- a. Only A and B belong to same subnet
- b. only B and C belongs to same subnet
- c. A, B, and C all belongs to the same subnet
- d. A, B, and C all belongs to three different subnets

The correct answer is:

only B and C belongs to same subnet



Question 24

Complete

Mark 1.00 out of 1.00

What is the primary purpose of Open Shortest Path First?

- a. None of these
- b. Interdomain routing
- c. Link-state routing within an Autonomous Systems
- d. lassful routing

The correct answer is:

Link-state routing within an Autonomous Systems

Question 25

Complete

Mark 1.00 out of 1.00

What are not the responsibilities of the Data link Layer?

- a. Framing
- b. MAC addressing
- c. Error detection
- d. IP addressing

The correct answer is:

IP addressing



Question 26

Complete

Mark 1.00 out of 1.00

What is the size of the window for host A if the value of receiver window (rwnd) is 5000 bytes and the value of congestion window (cwnd) is 5500 bytes?

- a. 10500 bytes
- b. None of these
- c. 5500 bytes
- d. 5000 bytes

The correct answer is:

5000 bytes

Question 27

Complete

Mark 0.00 out of 1.00

When might UDP be a suitable choice for data transmission?

- a. In applications requiring constant connection establishment.
- b. When guaranteed delivery is critical.
- c. For long-distance communication.
- d. In scenarios where occasional data loss is acceptable.

The correct answer is:

In scenarios where occasional data loss is acceptable.

Question 28

Complete

Mark 1.00 out of 1.00

Define the type of this Ethernet frame destination address **FF:FF:FF:FF:FF:FF**

- a. Broadcast
- b. None of these
- c. Multicast
- d. Unicast

The correct answer is:

Broadcast

Question 29

Complete

Mark 1.00 out of 1.00

What are the propagation time and the transmission time for a 2 Mbyte message (an image) if the transmission rate of the network is 1Mbps? Assume that the distance between the sender and the receiver is 4000 km and that light travels at 4×10^8 m/s.

- a. 2msecs, 40msecs
- b. 1 msecs, 40msecs
- c. 1 msecs, 16 secs
- d. 2msecs, 40secs

The correct answer is:

1 msecs, 16 secs

Question 30

Complete

Mark 1.00 out of 1.00

Bluetooth is a wireless technology for

- a. MAN
- b. PAN
- c. LAN
- d. WAN

The correct answer is:

PAN

Question 31

Complete

Mark 1.00 out of 1.00

The transport layer protocols used for real time multimedia, file transfer, DNS, and email respectively are

- a. TCP, UDP, UDP and TCP
- b. UDP, TCP, TCP and UDP
- c. UDP, TCP, UDP and TCP
- d. TCP, UDP, TCP and UDP

The correct answer is:

UDP, TCP, UDP and TCP

Question 32

Complete

Mark 1.00 out of 1.00

Which of the following statements is not applicable for cable internet access?

- a) It is a shared broadcast medium
- b) It includes Hybrid Fiber Co-axials
- c) Cable modem connects home PC to Ethernet port
- d) Analog signal is converted to digital signal in DSLAM

- a. c
- b. d
- c. a
- d. b

The correct answer is:

d

Question 33

Complete

Mark 1.00 out of 1.00

A shared broadcast medium of transmission rate 5 Mbps is being shared by 10 users (U1, U2, ..., U10). Calculate the maximum transmission rate of each of the users if the channel access scheme used is FDMA. If instead of FDMA the scheme being used is CDMA then what will be the maximum transmission rate of each of the users?

- a. 5000 Kbps, 5000 Kbps
- b. 500 Kbps, 5000 Kbps
- c. 50 Mbps, 5 Mbps
- d. None of these

The correct answer is:

500 Kbps, 5000 Kbps



Question 34

Complete

Mark 1.00 out of 1.00

Which of the following type of addressing is not supported by IPV6?

- a. Multicast
- b. None of these
- c. Unicast
- d. Broadcast

The correct answer is:

Broadcast

Question 35

Complete

Mark 1.00 out of 1.00

Which of the following statement is incorrect,

A shared broadcast media of transmission bandwidth 20 Mbps is shared by 100 users then,

- a. Using CDMA scheme, each of the users have an access to 200 Kbps of bandwidth
- b. Using FDMA scheme, each of the users have an access to 200 Kbps of bandwidth
- c. Using CDMA scheme, each of the users have an access to 20 Mbps of bandwidth
- d. Using TDMA scheme, each of the users have an access to 200 Kbps of bandwidth

The correct answer is:

Using CDMA scheme, each of the users have an access to 200 Kbps of bandwidth



Question 36

Complete

Mark 1.00 out of 1.00

How are MAC addresses learned and associated with the port?

- Source MAC address learning
- Destination MAC address learning
- Source interface learning



- Destination interface learning

The correct answer is:

Source MAC address learning

Question **37**

Complete

Mark 1.00 out of 1.00

Two popular routing protocol algorithms are distance vector (DVR) ad link state routing (LSR). Which of the following are not true?

- a. Count-to-infinity is a problem only with DVR and not with LSR
- b. In LSR, only the immediate neighbour routing vector entries are flooded in the network
- c. DVR requires lesser number of network messages than LSR
- d. In LSR, the entire routing table is flooded in the network

The correct answer is:

In LSR, the entire routing table is flooded in the network

Question **38**

Complete

Mark 1.00 out of 1.00

The header length of IPV6 datagram is

- a. 40 bytes
- b. 60 bytes
- c. 25 bytes
- d. 20 bytes

The correct answer is:

40 bytes

Question 39

Complete

Mark 1.00 out of 1.00

The size of an IP address in IPV6 is.....

- a. 128 bits
- b. 60 bits
- c. 40bytes
- d. 128 bytes

The correct answer is:

128 bits

Question 40

Complete

Mark 1.00 out of 1.00

An organization follows class B for their internal network. One of the host in the organization has an IP address 162.198.20.1. What will be the number of possible network addresses and host addresses? What will the broadcast address of the network?

- a. Network addresses 16384, Host addresses 65534, Broadcast address 255.255.255.255
- b. Network addresses 16384, Host addresses 65536, Broadcast address 162.255.255.255
- c. Network addresses 16384, Host addresses 65534, Broadcast address 162.255.255.255
- d. Network addresses 65536, Host addresses 65534, Broadcast address 255.255.255.255

The correct answer is:

Network addresses 16384, Host addresses 65534, Broadcast address 162.255.255.255



Question 41

Complete

Mark 1.00 out of 1.00

In computer networks nodes are....

- a. the computer that routes the data
- b. the computer that terminates the data
- c. the computer that originates/generates the data
- d. All of these

The correct answer is:

All of these

Question 42

Complete

Mark 1.00 out of 1.00

What is the total vulnerable time value of pure Aloha?

- a. T_{fr}
- b. $2 \times T_{fr}$
- c. None of these
- d. $\frac{1}{2} T_{fr}$

The correct answer is:

$2 \times T_{fr}$



Question 43

Complete

Mark 1.00 out of 1.00

What is the role of logical link control sublayer in layer 2?

- a. Sequencing
- b. Connection Establishment
- c. Error detection
- d. Acknowledgment

The correct answer is:

Error detection

Question 44

Complete

Mark 1.00 out of 1.00

Which Application Layer protocol is commonly used for secure data transfer over the web?

- a. HTTP
- b. HTTPS
- c. FTP
- d. SMTP

The correct answer is:

HTTPS



Question 45

Complete

Mark 1.00 out of 1.00

An organization is granted the block **130.34.12.64/30**. Find the maximum number of host addresses that can be assigned for this network?

- a. None of these
- b. 8
- c. 2
- d. 4

The correct answer is:

2

Question 46

Complete

Mark 0.00 out of 1.00

What is the primary consideration in scenarios where UDP is preferred over TCP?

- a. Low latency
- b. High reliability
- c. Connection establishment efficiency
- d. Error correction

The correct answer is:

Low latency

Question 47

Complete

Mark 0.00 out of 1.00

What is the purpose of MAC address learning in network switches?

- a. To build and maintain a MAC address table
- b. To flood frames throughout the network
- c. To initiate frame forwarding
- d. To power on and restart the switch

The correct answer is:

To build and maintain a MAC address table

Question 48

Complete

Mark 1.00 out of 1.00

In routing, the routing tables are updated periodically and the routing tables are not manually updated by the network administrator.

- a. None of these.
- b. Both static and dynamic routing
- c. Dynamic routing
- d. Static routing

The correct answer is:

Dynamic routing

Question 49

Complete

Mark 1.00 out of 1.00

The computation of the shortest path first in RIP is usually done by

- a. Bellman Ford algorithm
- b. Dijkstra's algorithm
- c. Kruskal's algorithm
- d. Vector algorithm

The correct answer is:

Bellman Ford algorithm

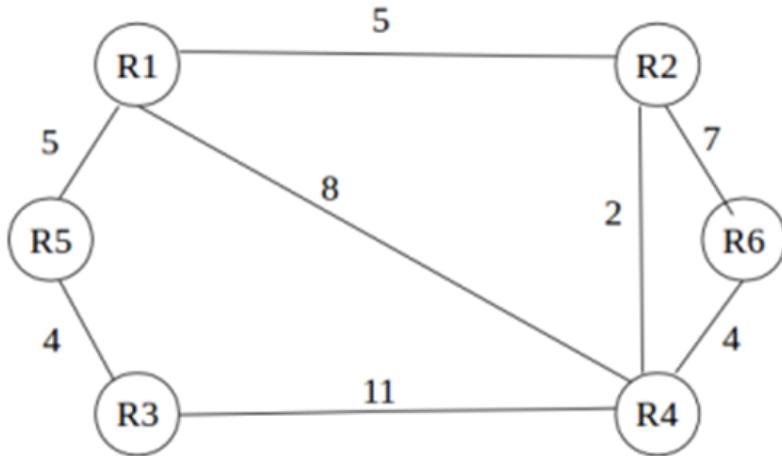


Question 50

Complete

Mark 1.00 out of 1.00

Explain the distance vector routing algorithm by running it for the following graph. Calculate the shortest distance from source R5 to destination R4.



- a. 11
- b. None of these
- c. 12
- d. 10

The correct answer is:

12

Question 51

Complete

Mark 1.00 out of 1.00

Which of the following would be good reason to run NAT?

- (i) You need to connect to the internet and your hosts do not have globally unique IP addresses.
- (ii) You change to a new ISP that requires you to renumber your network.
- (iii) You do not want any hosts connecting to the internet.
- (iv) You require two intranet with duplicate addresses to merge.

a. 3 only

b. All of these

c. 1, 2 and 4 only

d. 2 and 4 only

The correct answer is:

1, 2 and 4 only

Question 52

Complete

Mark 1.00 out of 1.00

While configuring the router, the IP address assigned to one port is 201.14.2.1/23. LAN1 is attached to this port of the router. Which of the following IP addresses are valid on this LAN1 interface,

I1: 201.14.1.100

I2: 201.14.1.3

I3: 201.14.2.2

I4: 201.14.3.0

a. Only I1 and I2

b. Only I2 and I3

c. Only I3 and I4

d. Only I1 and I3

The correct answer is:

Only I3 and I4

Question 53

Complete

Mark 1.00 out of 1.00

Which is not true for Packet switching?

- a. The delivery of these packets becomes easy when complicated protocols are used.
- b. Multiple users can use the same channel while transferring their packets.
- c. A uniform/ dedicated path is followed throughout the session.
- d. Installation costs of packet switching are expensive.

The correct answer is:

A uniform/ dedicated path is followed throughout the session.

Question 54

Complete

Mark 1.00 out of 1.00

Error control is responsibility of which OSI layers

- a. All of these
- b. Network and Transport layer
- c. Data link and Transport layer
- d. Physical and Data link layer

The correct answer is:

Data link and Transport layer

Question 55

Complete

Mark 1.00 out of 1.00

Two popular routing tables are Distance Vector and Link State routing, which of the following are true?

1. count-to-infinity is a problem only in distance vector and not in link state routing.
2. In link state, the shortest path algorithm is run only at one node.
3. In distance vector, the shortest path algorithm is run only at one node.
4. Distance vector requires fewer number of network messages than link state.

a. 2 and 3 only

b. 1, 2 and 4 only

c. 1, 3, and 4 only

d. 1 and 4 only

The correct answer is:

1 and 4 only

Question 56

Complete

Mark 1.00 out of 1.00

Which of the following options is correct?

In wireless distribution system

a. access points are not required

b. multiple access points are interconnected with each other

c. only one access point exists

d. there is no access point

The correct answer is:

multiple access points are interconnected with each other

Question 57

Complete

Mark 1.00 out of 1.00

What information is typically included in each entry of the MAC address table?

- a. MAC address and IP address
- b. MAC address and Port Number
- c. Frame size and type
- d. IP address and subnet mask

The correct answer is:

MAC address and Port Number

Question 58

Complete

Mark 1.00 out of 1.00

Which sub-layer of the data link layer performs data link functions that depend upon the type of medium?

- a. Media access control sub-layer
- b. Logical link control sub-layer
- c. network interface control sub-layer
- d. error control sub-layer

The correct answer is:

Media access control sub-layer



Question 59

Complete

Mark 1.00 out of 1.00

What is default subnet mask address of this IPV4 address **11011111 11110111 11000111 00011101**?

- a. 255.0.0.0
- b. 255.255.255.255
- c. 255.255.0.0
- d. 255.255.255.0

The correct answer is:

255.255.255.0

Question 60

Complete

Mark 1.00 out of 1.00

Suppose the IP address of device **1** is 10.105.1.113 and device **2** is 10.105.1.91 and the subnet mask used is 255.255.255.192. Both the devices will be able to communicate with each other using

- a. Hub
- b. Router
- c. Switch
- d. None of these

The correct answer is:

Switch

Question 61

Complete

Mark 1.00 out of 1.00

Which of the following is incorrect about Network Address Translation?

- a. NAT is a process in which one or more local IP address is translated into one or more Global IP address and vice versa.
- b. Router will do NAT translation without configuration.
- c. Certain application will not function while NAT is enabled.
- d. NAT results in switching path delays.

The correct answer is:

Router will do NAT translation without configuration.

Question 62

Complete

Mark 1.00 out of 1.00

Consider the Go-back-N protocol with a sender's window size of '8'. Suppose at time 't' the next frame in the buffer (i.e. the next inorder frame) the receiver is expecting has a sequence No. 5. Assume that the medium does not reorder the messages. What is the possible set of sequence number inside the sender's window at time 't'. Assume the sender has already received acknowledgment for all the previously transmitted frames.

- a. [5, 13]
- b. None of these
- c. [5, 12]
- d. [4, 12]

The correct answer is:

[5, 12]

Question 63

Complete

Mark 1.00 out of 1.00

Which one of the following is TRUE about- routing information protocol (RIP) and open shortest path first (OSPF) protocol?

- a. OSPF uses distance vector routing and RIP use link state routing
- b. RIP uses distance vector routing and OSPF use link state routing



- c. Both RIP and OSPF use distance vector routing
- d. Both RIP and OSPF use link state routing

The correct answer is:

RIP uses distance vector routing and OSPF use link state routing

Question **64**

Complete

Mark 1.00 out of 1.00

Transmission rate is decided by

- a. physical layer
- b. network layer
- c. transport layer
- d. data link layer

The correct answer is:

physical layer

Question **65**

Complete

Mark 1.00 out of 1.00

Which multiple access techniques is used by IEEE 802.11 standards for wireless LANs?

- a. ALOHA
- b. CSMA/CD
- c. CSMA/CA
- d. CSMA

The correct answer is:

CSMA/CA

Question 66

Complete

Mark 1.00 out of 1.00

Routing inside a single administrative domain is called as..... routing.

- a. None of these
- b. Inter-domain
- c. Path Vector
- d. Intra-domain

The correct answer is:

Intra-domain

Question 67

Complete

Mark 1.00 out of 1.00

For a given subnet mask 255.128.0.0, what is the number of subnets?

- a. 2
- b. 8
- c. 4
- d. 6

The correct answer is:

2



Question 68

Complete

Mark 1.00 out of 1.00

What kind of transmission medium is most appropriate to carry data in a computer network that is exposed to electrical interference?

- a. Coaxial cable
- b. Optical fiber



c. Microwave link

d. Un-shielded twisted pair

The correct answer is:

Optical fiber

Question **69**

Complete

Mark 1.00 out of 1.00

Which of the following is considered as the biggest advantage of preferring User Datagram protocol?

a. Low overheads

b. Connection oriented

c. Reliable

d. More overheads

The correct answer is:

Low overheads

Question **70**

Complete

Mark 1.00 out of 1.00

..... is an inter-domain routing protocol using path vector routing.

a. OSPF

b. BGP

c. EIGRP

d. RIP

The correct answer is:

BGP

Question 71

Complete

Mark 1.00 out of 1.00

Which one of the following is the start frame delimiter (SDF) flag in Ethernet frame

- a. 10101011
- b. 11111111
- c. 10101010
- d. 00000000

The correct answer is:

10101011

Question 72

Complete

Mark 1.00 out of 1.00

In Carrier Sense Multiple Access which node senses the channel, if idle it sends the data, otherwise it checks the medium after a random amount of time (not continuously) and transmits when found idle.

- a. Non-persistent
- b. O-persistent
- c. 1-persistent
- d. P-persistent

The correct answer is:

Non-persistent

Question 73

Complete

Mark 1.00 out of 1.00

Find out the valid IPV4 address from the following

- a. 75.45.301.14
- b. 224.200.89.90
- c. 221.34.7.8.20
- d. 112.56.075.78

The correct answer is:

224.200.89.90

Question 74

Complete

Mark 1.00 out of 1.00

Error detection and correction are offered by both

- a. Network Layer and Transport Layer
- b. Data link layer and Network Layer
- c. Data link layer and Transport Layer
- d. Physical Layer and Data link Layer

The correct answer is:

Data link layer and Transport Layer

Question 75

Complete

Mark 1.00 out of 1.00

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

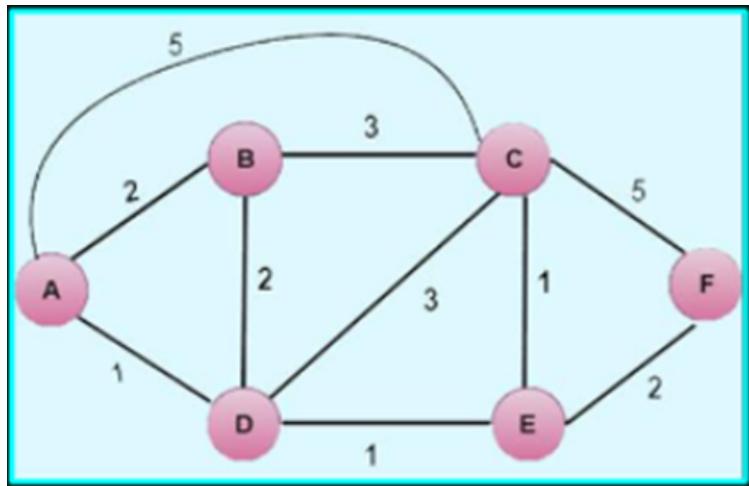
- a. routing
- b. inter-networking
- c. congestion control
- d. error control

The correct answer is:

error control**Question 76**

Complete

Mark 1.00 out of 1.00

Find the shortest path routing using open shortest path first (OSPF) algorithm for the following network graph. Start from node **A**.

- a. (A,0,-) (B,2,B or D), (C,3,D or E), (D,1,D), (E,2,D), (F,4,D or E)
- b. None of these
- c. (A,0,-) (B,3,C or E), (C,3,B or F), (D,1,D), (E,2,D), (F,4,F)
- d. (A,0,-) (B,2,B), (C,5,F), (D,2,B), (E,2,D), (F,2,E)

The correct answer is:

(A,0,-) (B,2,B or D), (C,3,D or E), (D,1,D), (E,2,D), (F,4,D or E)

Question 77

Complete

Mark 1.00 out of 1.00

In selective repeat request window, the sender resends.....

- a. All the packets
- b. packets from starting
- c. packets which are not lost
- d. only those packets which are lost or corrupted

The correct answer is:

only those packets which are lost or corrupted

Question 78

Complete

Mark 1.00 out of 1.00

The OSI model was developed ____ TCP/IP model.

- a. after
- b. prior to
- c. None of these
- d. simultaneous to

The correct answer is:

after



Question 79

Complete

Mark 1.00 out of 1.00

Optical Network Terminator is connected to splitter using _____

- a. hybrid fiber co-axial cable
- b. Twisted pair cable
- c. Optical cable
- d. microwave link

The correct answer is:

Optical cable

Question 80

Complete

Mark 1.00 out of 1.00

Consider three devices A, B, and C with IP addresses 100.10.5.2, 100.10.5.5 and 100.10.5.6 respectively. The subnet mask is set to 255.255.255.252 for all the three devices. Which one of the following is true?

- i. A, B, and C all belongs to the same subnet
- ii. only B and C belongs to same subnet
- iii. A, B, and C all belongs to three different subnets
- iv. Only A and B belong to same subnet

- a. iii
- b. iv
- c. ii
- d. i

The correct answer is:

ii

Question 81

Complete

Mark 1.00 out of 1.00

A group of k stations share 200 kbps slotted Aloha channel. Each station output, a 400 bits frame on an average of 1000 ms even if the previous one has not been sent. What is the required value of k ?

- a. None of these
- b. 184 stations
- c. 368 stations
- d. 200 stations

The correct answer is:

184 stations

Question 82

Complete

Mark 1.00 out of 1.00

Dynamic Host Configuration Protocol is used for

- a. both IPV4 and IPV6
- b. IPV4
- c. IPV6
- d. None of these

The correct answer is:

both IPV4 and IPV6



Question 83

Complete

Mark 1.00 out of 1.00

Which of the following is true for Address Resolution Protocol (ARP)?

- a. ARP request is broadcast and ARP reply is unicast.
- b. ARP request is unicast and ARP reply is also unicast.
- c. ARP request is unicast and ARP reply is broadcast.
- d. ARP request is broadcast and ARP reply is also broadcast.

The correct answer is:

ARP request is broadcast and ARP reply is unicast.

Question 84

Complete

Mark 1.00 out of 1.00

What is the primary purpose of a virtual local area networks?

- a. Segmenting a network inside a switch or device
- b. Simulating a network
- c. To create a virtual private network
- d. Demonstrating the proper layout for network

The correct answer is:

Segmenting a network inside a switch or device

Question 85

Complete

Mark 1.00 out of 1.00

An organization is granted the block 130.34.12.64/26. Find the maximum number of host addresses that can be assigned for this network?

- a. 32
- b. 18
- c. None of these
- d. 256

The correct answer is:

None of these

Question 86

Complete

Mark 1.00 out of 1.00

Which of the following is not a limitation of IPV4 addresses?

- a. IPV4 cannot handle internet routing table expansion
- b. IPV4 suffers from IP address depletion
- c. IPV4 lacks end-to-end connectivity
- d. IPV4 fits for small topology drawing

The correct answer is:

IPV4 fits for small topology drawing



Question 87

Complete

Mark 1.00 out of 1.00

Station A uses 45 byte packets to transmit messages to Station B using a sliding window protocol. The round trip time delay between A and B is 60ms and the bottleneck bandwidth on the path A and B is 120kbps. What is the optimal window size that A should use?

- a. 21
- b. 20
- c. None of these
- d. 31

The correct answer is:

21

Question 88

Complete

Mark 1.00 out of 1.00

What is the Hexadecimal equivalent of the following Ethernet address

010110100010001010101000110001010101000001111

- a. 5A115514AA0F
- b. None of these
- c. 5A1155189A0E
- d. 5A115518AA0F

The correct answer is:

5A115518AA0F



Question 89

Complete

Mark 0.00 out of 1.00

Which of the following statements about UDP is true?

- a. It guarantees the delivery of all packets.
- b. It establishes a connection before data transmission.
- c. It is connectionless and does not provide error recovery.
- d. It is slower and heavier than TCP.

The correct answer is:

It is connectionless and does not provide error recovery.

Question 90

Complete

Mark 1.00 out of 1.00

Which of the following are disadvantages of Network Address Translation?

- (i) Translation introduces switching path delays.
- (ii) Conserve legally registered addresses.
- (iii) Cause loss of end-to-end IP traceability
- (iv) Increase flexibility when connecting to the internet
- (v) Certain application will not function with Network Address Translation enabled.
- (vi) Reduce address overlap occurrence

- a. 3 and 5 only

- b. 2,4 and 5 only

- c. 1,3 and 5 only

- d. 1 and 5 only

The correct answer is:

1,3 and 5 only

Question 91

Complete

Mark 1.00 out of 1.00

The metric used by.....protocol is the hop count.

- a. Open Shortest Path First
- b. Enhanced Interior Gateway Routing Protocol
- c. Routing Information Protocol
- d. Border Gateway Protocol

The correct answer is:

Routing Information Protocol

Question 92

Complete

Mark 1.00 out of 1.00

Which of the following statement is incorrect, if the transmission bandwidth of a shared broadcast media of 50 Mbps is shared by 500 users then,

- a. Using TDMA scheme, each of the users have an access to 100 Kbps of bandwidth
- b. Using FDMA scheme, each of the users have an access to 100 Kbps of bandwidth
- c. Using CDMA scheme, each of the users have an access to 50 Mbps of bandwidth
- d. Using CDMA scheme, each of the users have an access to 100 Kbps of bandwidth

The correct answer is:

Using CDMA scheme, each of the users have an access to 100 Kbps of bandwidth



Question 93

Complete

Mark 0.00 out of 1.00

Reverse Address Resolution protocol

- a. maps public address to private address
- b. maps private address to public address
- c. maps MAC address to IP address
- d. maps IP address to MAC address

The correct answer is:

maps IP address to MAC address

Question 94

Complete

Mark 1.00 out of 1.00

Which is not true for Packet switching?

- a. The delivery of these packets becomes easy when complicated protocols are used.
- b. A dedicated path is followed throughout the session.
- c. Multiple users can use the same channel while transferring their packets.
- d. Installation costs of packet switching are expensive.

The correct answer is:

A dedicated path is followed throughout the session.



Question 95

Complete

Mark 1.00 out of 1.00

Dynamic Host Configuration Protocol issues to the client.

- a. IP address
- b. Port address
- c. None of these
- d. MAC address

The correct answer is:

IP address

Question 96

Complete

Mark 1.00 out of 1.00

Which of the following is a set of rules that governs the data communication in a computer network

- a. None of these
- b. Activity standards
- c. Protocols
- d. RFCs

The correct answer is:

Protocols

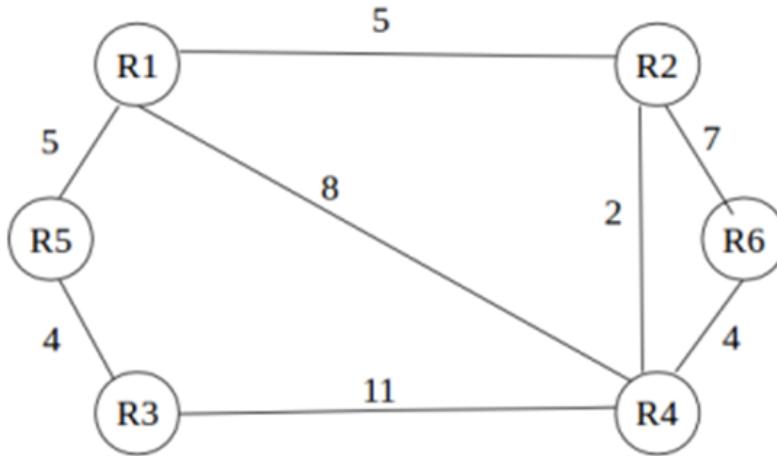


Question 97

Complete

Mark 1.00 out of 1.00

Explain the distance vector routing algorithm by running it for the following graph. Calculate the shortest distance from source R1 to destination R6.



- a. 12
- b. 10
- c. 11
- d. None of these

The correct answer is:

11

Question 98

Complete

Mark 1.00 out of 1.00

Transport layer deals with.....communication.

- a. person-to-person
- b. process-to-process
- c. application-to-application
- d. node-to-node

The correct answer is:

process-to-process

Question 99

Complete

Mark 1.00 out of 1.00

Identify the correct order in which the following actions take place in an interaction between a web browser and a web server

- (1) The web browser requests a web page using HTTP
- (2) The web browser establishes a TCP connection with the web browser
- (3) The web browser sends the requested web page using HTTP
- (4) The web browser resolves the domain name using DNS

- a. None of these
- b. 4,2,1,3
- c. 4,3,1,2
- d. 3,2,1,4

The correct answer is:

4,2,1,3

Question 100

Complete

Mark 1.00 out of 1.00

Which address identifies a process on a host?

- a. specific address
- b. physical address
- c. port address
- d. logical address

The correct answer is:

port address

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[Mid-Semester Exam_CS301 \(GNR+Diu\)_06-11-2023_9.30 AM to 11.30 AM ►](#)

Started on Friday, 22 December 2023, 9:00 AM

State Finished

Completed on Friday, 22 December 2023, 11:15 AM

Time taken 2 hours 15 mins

Question **1**

Complete

Marked out of 1.00

A landline telephone network is an example of..... network.

- a. Line switched
- b. Both packet switched and circuit switched
- c. Packet switched
- d. Circuit switched

Question **2**

Complete

Marked out of 1.00

Electronic mail uses which Application layer protocol?

- a. FTP
- b. SMTP
- c. SIP
- d. HTTP

Question 3

Complete

Marked out of 1.00

What is the correct order of the operation of open shortest path first algorithm?

- i. Establishing adjacencies and synchronization of database
- ii. Hello packet
- iii. Propagation of link state information and building of routing tables

- a. i-ii-iii
- b. ii-iii-i
- c. iii-ii-i
- d. ii-i-iii

Question 4

Complete

Marked out of 1.00

Which of the following statement(s) is /are true about TCP?

- (i) TCP is connection oriented protocol
- (ii) TCP uses a three way handshake to establish a connection
- (iii) TCP receives data from application as a single stream

- a. (i), (ii) and (iii)
- b. (i) only
- c. (i) and (ii) only
- d. (i) and (iii) only

Question 5

Complete

Marked out of 1.00

The number of bits in IPV4 address, IPV6 address, MAC address and Port address are

- a. 32, 128, 48, 16
- b. 32, 128, 64, 16
- c. 128, 32, 48, 16
- d. 32, 128, 48, 32

Question 6

Complete

Marked out of 1.00

Which of the following protocol is not used to resolve one form of addressing to another one?

- a. Address Resolution Protocol
- b. Dynamic Host Configuration Protocol
- c. Reverse Address Resolution Protocol
- d. Domain Name System

Question 7

Complete

Marked out of 1.00

Which layer is responsible for the process to process delivery in a general network model?

- a. session layer
- b. transport layer
- c. network layer
- d. data link layer

Question 8

Complete

Marked out of 1.00

Which of the following routing algorithms can be used for network layer design?

- a. link state routing
- b. All of these
- c. shortest path algorithm
- d. distance vector routing

Question 9

Complete

Marked out of 1.00

Which are end system devices

- a. smartphones
- b. web servers
- c. mail servers
- d. All of these

Question 10

Complete

Marked out of 1.00

Which of the following protocols is the bit-oriented protocol?

- a. HTTP
- b. All of the these
- c. SSL
- d. HDLC

Question 11

Complete

Marked out of 1.00

An organization follows Class C for their internal network. One of the host in the organization has an IP address 162.198.20.1. What will be the number of possible network addresses and host addresses? What will the broadcast address of the network?

- a. Network addresses 16384, Host addresses 65534, Broadcast address 162.198.255.255
- b. Network addresses 2097150, Host addresses 256, Broadcast address 162.198.20.255
- c. Network addresses 2097152, Host addresses 254, Broadcast address 162.198.20.255
- d. Network addresses 2097152, Host addresses 254, Broadcast address 162.198.255.255

Question 12

Complete

Marked out of 1.00

The sender employs the "Go Back 10 ARQ" scheme. A 50 Kbps link has a propagation speed of 2×10^8 m/s. The transmitter and receiver is at 2000 km distance from each other. Each frame is 100 bytes long, assuming no transmission delay what will be the minimum round trip time delay for transmission of 1 million bits?

- a. 50 ms
- b. None of these
- c. 20 ms
- d. 10 ms

Question 13

Complete

Marked out of 1.00

The _____ layer links network/user support layers by segmenting and rearranging the data.

- a. network layer
- b. application layer
- c. session Layer
- d. transport layer

Question 14

Complete

Marked out of 1.00

What does a network switch do when it receives a frame with a destination MAC address that is not in its MAC address table?

- a. Drops the frame
- b. Initiates MAC address aging
- c. Forwards the frame only to the source port
- d. Floods the frame to all ports

Question 15

Complete

Marked out of 1.00

The computation of the shortest path first in OSPF is usually done by

- a. Kruskal's algorithm
- b. Bellman Ford algorithm
- c. Vector algorithm
- d. Dijkstra's algorithm

Question 16

Complete

Marked out of 1.00

A 50 Kbps satellite link has a propagation delay of 500 ms. The transmitter employs the "Go Back 16 ARQ" scheme. Assuming that each frame is 200 bytes long, what is the maximum data rate possible?

- a. 248 bps
- b. 2.48 Mbps
- c. None of these
- d. 2.48 Kbps

Question 17

Complete

Marked out of 1.00

Which one of the following uses UDP as the transport protocol?

- a. Telnet
- b. HTTP
- c. SMTP
- d. DNS

Question 18

Complete

Marked out of 1.00

If a class B network on the internet has a subnet mask of 255.255.248.0, what is the maximum number of hosts per subnet?

- a. Network addresses 16384, Host addresses 65534, Broadcast address 162.255.255.255
- b. Network addresses 65536, Host addresses 65534, Broadcast address 255.255.255.255
- c. Network addresses 16384, Host addresses 65534, Broadcast address 255.255.255.255
- d. Network addresses 16384, Host addresses 65536, Broadcast address 162.255.255.255

Question 19

Complete

Marked out of 1.00

EUI-64 process is a method we can use to automatically configure IPV6 host addresses.

- a. False
- b. True

Question 20

Complete

Marked out of 1.00

What is the type of the destination address of these Ethernet address **47:30:10:21:10:1A**

- a. Broadcast
- b. Not a valid address
- c. Unicast
- d. Multicast

Question 21

Complete

Marked out of 1.00

What will be the propagation time when the distance between two points is 2400km? Assuming the propagation speed to be 4×10^8 m/s in cable

- a. 5ms
- b. 1ms
- c. 6ms
- d. 2ms

Question 22

Complete

Marked out of 1.00

To avoid collisions on wireless networks, _____ was invented.

- a. None of these
- b. CSMA/CD
- c. CSMA/CA
- d. Ethernet

Question 23

Complete

Marked out of 1.00

Consider three devices A, B, and C with IP addresses 10.105.1.30, 10.105.1.33 and 10.105.1.34 respectively. The subnet mask is set to 255.255.255.224 for all the three devices. Which one of the following is true?

- a. Only A and B belong to same subnet
- b. only B and C belongs to same subnet
- c. A, B, and C all belongs to the same subnet
- d. A, B, and C all belongs to three different subnets

Question 24

Complete

Marked out of 1.00

What is the primary purpose of Open Shortest Path First?

- a. None of these
- b. Interdomain routing
- c. Link-state routing within an Autonomous Systems
- d. lassful routing

Question 25

Complete

Marked out of 1.00

What are not the responsibilities of the Data link Layer?

- a. Framing
- b. MAC addressing
- c. Error detection
- d. IP addressing

Question 26

Complete

Marked out of 1.00

What is the size of the window for host A if the value of receiver window (rwnd) is 5000 bytes and the value of congestion window (cwnd) is 5500 bytes?

- a. 10500 bytes
- b. None of these
- c. 5500 bytes
- d. 5000 bytes

Question 27

Complete

Marked out of 1.00

When might UDP be a suitable choice for data transmission?

- a. In applications requiring constant connection establishment.
- b. When guaranteed delivery is critical.
- c. For long-distance communication.
- d. In scenarios where occasional data loss is acceptable.

Question 28

Complete

Marked out of 1.00

Define the type of this Ethernet frame destination address **FF:FF:FF:FF:FF:FF**

- a. Broadcast
- b. None of these
- c. Multicast
- d. Unicast

Question 29

Complete

Marked out of 1.00

What are the propagation time and the transmission time for a 2 Mbyte message (an image) if the transmission rate of the network is 1Mbps? Assume that the distance between the sender and the receiver is 4000 km and that light travels at 4×10^8 m/s.

- a. 2msecs, 40msecs
- b. 1 msecs, 40msecs
- c. 1 msecs, 16 secs
- d. 2msecs, 40secs

Question 30

Complete

Marked out of 1.00

Bluetooth is a wireless technology for

- a. MAN
- b. PAN
- c. LAN
- d. WAN

Question 31

Complete

Marked out of 1.00

The transport layer protocols used for real time multimedia, file transfer, DNS, and email respectively are

- a. TCP, UDP, UDP and TCP
- b. UDP, TCP, TCP and UDP
- c. UDP, TCP, UDP and TCP
- d. TCP, UDP, TCP and UDP

Question 32

Complete

Marked out of 1.00

Which of the following statements is not applicable for cable internet access?

- a) It is a shared broadcast medium
- b) It includes Hybrid Fiber Co-axials
- c) Cable modem connects home PC to Ethernet port
- d) Analog signal is converted to digital signal in DSLAM

- a. c
- b. d
- c. a
- d. b

Question 33

Complete

Marked out of 1.00

A shared broadcast medium of transmission rate 5 Mbps is being shared by 10 users (U1, U2, ..., U10). Calculate the maximum transmission rate of each of the users if the channel access scheme used is FDMA. If instead of FDMA the scheme being used is CDMA then what will be the maximum transmission rate of each of the users?

- a. 5000 Kbps, 5000 Kbps
- b. 500 Kbps, 5000 Kbps
- c. 50 Mbps, 5 Mbps
- d. None of these

Question 34

Complete

Marked out of 1.00

Which of the following type of addressing is not supported by IPV6?

- a. Multicast
- b. None of these
- c. Unicast
- d. Broadcast

Question 35

Complete

Marked out of 1.00

Which of the following statement is incorrect,

A shared broadcast media of transmission bandwidth 20 Mbps is shared by 100 users then,

- a. Using CDMA scheme, each of the users have an access to 200 Kbps of bandwidth
- b. Using FDMA scheme, each of the users have an access to 200 Kbps of bandwidth
- c. Using CDMA scheme, each of the users have an access to 20 Mbps of bandwidth
- d. Using TDMA scheme, each of the users have an access to 200 Kbps of bandwidth

Question 36

Complete

Marked out of 1.00

How are MAC addresses learned and associated with the port?

- a. Source MAC address learning
- b. Destination MAC address learning
- c. Source interface learning
- d. Destination interface learning

Question 37

Complete

Marked out of 1.00

Two popular routing protocol algorithms are distance vector (DVR) ad link state routing (LSR). Which of the following are not true?

- a. Count-to-infinity is a problem only with DVR and not with LSR
- b. In LSR, only the immediate neighbour routing vector entries are flooded in the network
- c. DVR requires lesser number of network messages than LSR
- d. In LSR, the entire routing table is flooded in the network

Question 38

Complete

Marked out of 1.00

The header length of IPV6 datagram is

- a. 40 bytes
- b. 60 bytes
- c. 25 bytes
- d. 20 bytes

Question 39

Complete

Marked out of 1.00

The size of an IP address in IPV6 is.....

- a. 128 bits
- b. 60 bits
- c. 40bytes
- d. 128 bytes

Question 40

Complete

Marked out of 1.00

An organization follows class B for their internal network. One of the host in the organization has an IP address 162.198.20.1. What will be the number of possible network addresses and host addresses? What will the broadcast address of the network?

- a. Network addresses 16384, Host addresses 65534, Broadcast address 255.255.255.255
- b. Network addresses 16384, Host addresses 65536, Broadcast address 162.255.255.255
- c. Network addresses 16384, Host addresses 65534, Broadcast address 162.255.255.255
- d. Network addresses 65536, Host addresses 65534, Broadcast address 255.255.255.255

Question 41

Complete

Marked out of 1.00

In computer networks nodes are....

- a. the computer that routes the data
- b. the computer that terminates the data
- c. the computer that originates/generates the data
- d. All of these

Question 42

Complete

Marked out of 1.00

What is the total vulnerable time value of pure Aloha?

- a. T_{fr}
- b. $2 \times T_{fr}$
- c. None of these
- d. $\frac{1}{2} T_{fr}$

Question 43

Complete

Marked out of 1.00

What is the role of logical link control sublayer in layer 2?

- a. Sequencing
- b. Connection Establishment
- c. Error detection
- d. Acknowledgment

Question 44

Complete

Marked out of 1.00

Which Application Layer protocol is commonly used for secure data transfer over the web?

- a. HTTP
- b. HTTPS
- c. FTP
- d. SMTP

Question 45

Complete

Marked out of 1.00

An organization is granted the block **130.34.12.64/30**. Find the maximum number of host addresses that can be assigned for this network?

- a. None of these
- b. 8
- c. 2
- d. 4

Question 46

Complete

Marked out of 1.00

What is the primary consideration in scenarios where UDP is preferred over TCP?

- a. Low latency
- b. High reliability
- c. Connection establishment efficiency
- d. Error correction

Question 47

Complete

Marked out of 1.00

What is the purpose of MAC address learning in network switches?

- a. To build and maintain a MAC address table
- b. To flood frames throughout the network
- c. To initiate frame forwarding
- d. To power on and restart the switch

Question 48

Complete

Marked out of 1.00

In routing, the routing tables are updated periodically and the routing tables are not manually updated by the network administrator.

- a. None of these.
- b. Both static and dynamic routing
- c. Dynamic routing
- d. Static routing

Question 49

Complete

Marked out of 1.00

The computation of the shortest path first in RIP is usually done by

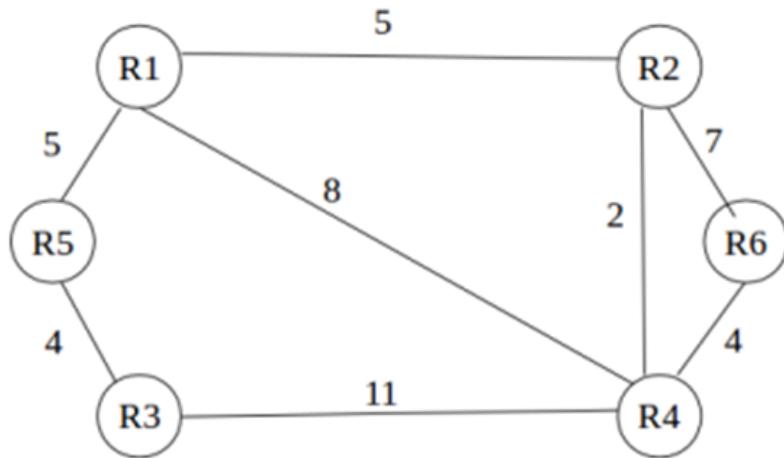
- a. Bellman Ford algorithm
- b. Dijkstra's algorithm
- c. Kruskal's algorithm
- d. Vector algorithm

Question 50

Complete

Marked out of 1.00

Explain the distance vector routing algorithm by running it for the following graph. Calculate the shortest distance from source R5 to destination R4.



- a. 11
- b. None of these
- c. 12
- d. 10

Question 51

Complete

Marked out of 1.00

Which of the following would be good reason to run NAT?

- (i) You need to connect to the internet and your hosts do not have globally unique IP addresses.
- (ii) You change to a new ISP that requires you to renumber your network.
- (iii) You do not want any hosts connecting to the internet.
- (iv) You require two intranet with duplicate addresses to merge.

- a. 3 only
- b. All of these
- c. 1, 2 and 4 only
- d. 2 and 4 only

Question 52

Complete

Marked out of 1.00

While configuring the router, the IP address assigned to one port is 201.14.2.1/23. LAN1 is attached to this port of the router. Which of the following IP addresses are valid on this LAN1 interface,

I1: 201.14.1.100**I2: 201.14.1.3****I3: 201.14.2.2****I4: 201.14.3.0**

- a. Only I1 and I2
- b. Only I2 and I3
- c. Only I3 and I4
- d. Only I1 and I3

Question 53

Complete

Marked out of 1.00

Which is not true for Packet switching?

- a. The delivery of these packets becomes easy when complicated protocols are used.
- b. Multiple users can use the same channel while transferring their packets.
- c. A uniform/ dedicated path is followed throughout the session.
- d. Installation costs of packet switching are expensive.

Question 54

Complete

Marked out of 1.00

Error control is responsibility of which OSI layers

- a. All of these
- b. Network and Transport layer
- c. Data link and Transport layer
- d. Physical and Data link layer

Question 55

Complete

Marked out of 1.00

Two popular routing tables are Distance Vector and Link State routing, which of the following are true?

1. count-to-infinity is a problem only in distance vector and not in link state routing.
2. In link state, the shortest path algorithm is run only at one node.
3. In distance vector, the shortest path algorithm is run only at one node.
4. Distance vector require lesser number of network message than link state.

- a. 2 and 3 only
- b. 1, 2 and 4 only
- c. 1, 3, and 4 only
- d. 1 and 4 only

Question 56

Complete

Marked out of 1.00

Which of the following option is correct?

In wireless distribution system

- a. access points are not required

- b. multiple access points are inter-connected with each other
- c. only one access point exists
- d. there is no access point

Question 57

Complete

Marked out of 1.00

What information is typically included in each entry of the MAC address table?

- a. MAC address and IP address
- b. MAC address and Port Number
- c. Frame size and type
- d. IP address and subnet mask

Question 58

Complete

Marked out of 1.00

Which sub-layer of the data link layer performs data link functions that depend upon the type of medium?

- a. Media access control sub-layer
- b. Logical link control sub-layer
- c. network interface control sub-layer
- d. error control sub-layer

Question 59

Complete

Marked out of 1.00

What is default subnet mask address of this IPV4 address **11011111 11110111 11000111 00011101**?

- a. 255.0.0.0
- b. 255.255.255.255
- c. 255.255.0.0

d. 255.255.255.0**Question 60**

Complete

Marked out of 1.00

Suppose the IP address of device **1** is 10.105.1.113 and device **2** is 10.105.1.91 and the subnet mask used is 255.255.255.192. Both the devices will be able to communicate with each other using

- a. Hub
- b. Router
- c. Switch
- d. None of these

Question 61

Complete

Marked out of 1.00

Which of the following is incorrect about Network Address Translation?

- a. NAT is a process in which one or more local IP address is translated into one or more Global IP address and vice versa.
- b. Router will do NAT translation without configuration.
- c. Certain application will not function while NAT is enabled.
- d. NAT results in switching path delays.

Question 62

Complete

Marked out of 1.00

Consider the Go-back-N protocol with a sender's window size of '8'. Suppose at time 't' the next frame in the buffer (i.e. the next inorder frame) the receiver is expecting has a sequence No. 5. Assume that the medium does not reorder the messages. What is the possible set of sequence number inside the sender's window at time 't'. Assume the sender has already received acknowledgment for all the previously transmitted frames.

- a. [5, 13]
- b. None of these
- c. [5, 12]
- d. [4, 12]

Question 63

Complete

Marked out of 1.00

Which one of the following is TRUE about- routing information protocol (RIP) and open shortest path first (OSPF) protocol?

- a. OSPF uses distance vector routing and RIP use link state routing
- b. RIP uses distance vector routing and OSPF use link state routing
- c. Both RIP and OSPF use distance vector routing
- d. Both RIP and OSPF use link state routing

Question 64

Complete

Marked out of 1.00

Transmission rate is decided by

- a. physical layer
- b. network layer
- c. transport layer
- d. data link layer

Question 65

Complete

Marked out of 1.00

Which multiple access techniques is used by IEEE 802.11 standards for wireless LANs?

- a. ALOHA
- b. CSMA/CD
- c. CSMA/CA
- d. CSMA

Question 66

Complete

Marked out of 1.00

Routing inside a single administrative domain is called as..... routing.

- a. None of these
- b. Inter-domain
- c. Path Vector
- d. Intra-domain

Question 67

Complete

Marked out of 1.00

For a given subnet mask 255.128.0.0, what is the number of subnets?

- a. 2
- b. 8
- c. 4
- d. 6

Question 68

Complete

Marked out of 1.00

What kind of transmission medium is most appropriate to carry data in a computer network that is exposed to electrical interference?

- a. Coaxial cable
- b. Optical fiber
- c. Microwave link
- d. Un-shielded twisted pair

Question 69

Complete

Marked out of 1.00

Which of the following is considered as the biggest advantage of preferring User Datagram protocol?

- a. Low overheads
- b. Connection oriented
- c. Reliable
- d. More overheads

Question 70

Complete

Marked out of 1.00

..... is an inter-domain routing protocol using path vector routing.

- a. OSPF
- b. BGP
- c. EIGRP
- d. RIP

Question 71

Complete

Marked out of 1.00

Which one of the following is the start frame delimiter (SDF) flag in Ethernet frame

- a. 10101011
- b. 11111111
- c. 10101010
- d. 00000000

Question 72

Complete

Marked out of 1.00

In Carrier Sense Multiple Access which node senses the channel, if idle it sends the data, otherwise it checks the medium after a random amount of time (not continuously) and transmits when found idle.

- a. Non-persistent
- b. O-persistent
- c. 1-persistent
- d. P-persistent

Question 73

Complete

Marked out of 1.00

Find out the valid IPV4 address from the following

- a. 75.45.301.14
- b. 224.200.89.90
- c. 221.34.7.8.20
- d. 112.56.075.78

Question 74

Complete

Marked out of 1.00

Error detection and correction are offered by both

- a. Network Layer and Transport Layer
- b. Data link layer and Network Layer
- c. Data link layer and Transport Layer
- d. Physical Layer and Data link Layer

Question 75

Complete

Marked out of 1.00

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

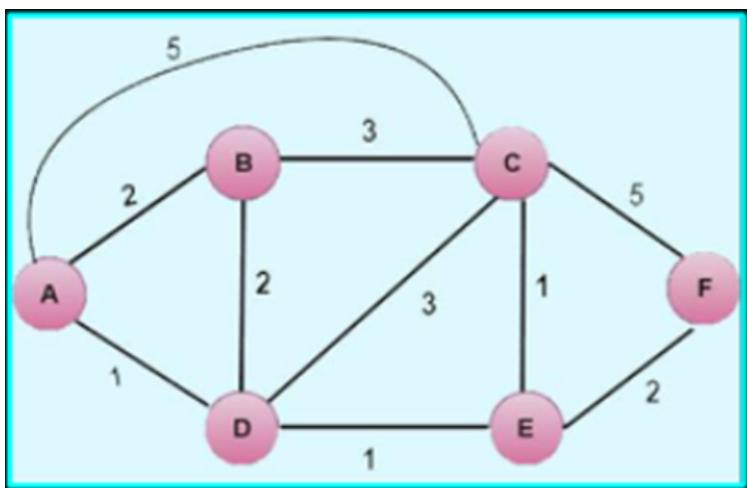
- a. routing
- b. inter-networking
- c. congestion control
- d. error control

Question 76

Complete

Marked out of 1.00

Find the shortest path routing using open shortest path first (OSPF) algorithm for the following network graph. Start from node **A**.



- a. (A,0,-) (B,2,B or D), (C,3,D or E), (D,1,D), (E,2,D), (F,4,D or E)
- b. None of these
- c. (A,0,-) (B,3,C or E), (C,3,B or F), (D,1,D), (E,2,D), (F,4,F)
- d. (A,0,-) (B,2,B), (C,5,F), (D,2,B), (E,2,D), (F,2,E)

Question 77

Complete

Marked out of 1.00

In selective repeat request window, the sender resends.....

- a. All the packets
- b. packets from starting
- c. packets which are not lost
- d. only those packets which are lost or corrupted

Question 78

Complete

Marked out of 1.00

The OSI model was developed ____ TCP/IP model.

- a. after
- b. prior to
- c. None of these
- d. simultaneous to

Question 79

Complete

Marked out of 1.00

Optical Network Terminator is connected to splitter using _____

- a. hybrid fiber co-axial cable
- b. Twisted pair cable
- c. Optical cable
- d. microwave link

Question 80

Complete

Marked out of 1.00

Consider three devices A, B, and C with IP addresses 100.10.5.2, 100.10.5.5 and 100.10.5.6 respectively. The subnet mask is set to 255.255.255.252 for all the three devices. Which one of the following is true?

- i. A, B, and C all belongs to the same subnet
- ii. only B and C belongs to same subnet
- iii. A, B, and C all belongs to three different subnets
- iv. Only A and B belong to same subnet

- a. iii
- b. iv
- c. ii
- d. i

Question 81

Complete

Marked out of 1.00

A group of k stations share 200 kbps slotted Aloha channel. Each station output, a 400 bits frame on an average of 1000 ms even if the previous one has not been sent. What is the required value of k ?

- a. None of these
- b. 184 stations
- c. 368 stations
- d. 200 stations

Question 82

Complete

Marked out of 1.00

Dynamic Host Configuration Protocol is used for

- a. both IPV4 and IPV6
- b. IPV4
- c. IPV6
- d. None of these

Question 83

Complete

Marked out of 1.00

Which of the following is true for Address Resolution Protocol (ARP)?

- a. ARP request is broadcast and ARP reply is unicast.
- b. ARP request is unicast and ARP reply is also unicast.
- c. ARP request is unicast and ARP reply is broadcast.
- d. ARP request is broadcast and ARP reply is also broadcast.

Question 84

Complete

Marked out of 1.00

What is the primary purpose of a virtual local area networks?

- a. Segmenting a network inside a switch or device
- b. Simulating a network
- c. To create a virtual private network
- d. Demonstrating the proper layout for network

Question 85

Complete

Marked out of 1.00

An organization is granted the block 130.34.12.64/26. Find the maximum number of host addresses that can be assigned for this network?

- a. 32
- b. 18
- c. None of these
- d. 256

Question 86

Complete

Marked out of 1.00

Which of the following is not a limitation of IPV4 addresses?

- a. IPV4 cannot handle internet routing table expansion
- b. IPV4 suffers from IP address depletion
- c. IPV4 lacks end-to-end connectivity
- d. IPV4 fits for small topology drawing

Question 87

Complete

Marked out of 1.00

Station A uses 45 byte packets to transmit messages to Station B using a sliding window protocol. The round trip time delay between A and B is 60ms and the bottleneck bandwidth on the path A and B is 120kbps. What is the optimal window size that A should use?

- a. 21
- b. 20
- c. None of these
- d. 31

Question 88

Complete

Marked out of 1.00

What is the Hexadecimal equivalent of the following Ethernet address

010110100001000101010101000110001010101000001111

- a. 5A115514AA0F
- b. None of these
- c. 5A1155189A0E
- d. 5A115518AA0F

Question 89

Complete

Marked out of 1.00

Which of the following statements about UDP is true?

- a. It guarantees the delivery of all packets.
- b. It establishes a connection before data transmission.
- c. It is connectionless and does not provide error recovery.
- d. It is slower and heavier than TCP.

Question 90

Complete

Marked out of 1.00

Which of the following are disadvantages of Network Address Translation?

- (i) Translation introduces switching path delays.
- (ii) Conserve legally registered addresses.
- (iii) Cause loss of end-to-end IP traceability
- (iv) Increase flexibility when connecting to the internet
- (v) Certain application will not function with Network Address Translation enabled.
- (vi) Reduce address overlap occurrence

 a. 3 and 5 only b. 2,4 and 5 only c. 1,3 and 5 only d. 1 and 5 only

Question 91

Complete

Marked out of 1.00

The metric used by.....protocol is the hop count.

- a. Open Shortest Path First
- b. Enhanced Interior Gateway Routing Protocol
- c. Routing Information Protocol
- d. Border Gateway Protocol

Question 92

Complete

Marked out of 1.00

Which of the following statement is incorrect, if the transmission bandwidth of a shared broadcast media of 50 Mbps is shared by 500 users then,

- a. Using TDMA scheme, each of the users have an access to 100 Kbps of bandwidth
- b. Using FDMA scheme, each of the users have an access to 100 Kbps of bandwidth
- c. Using CDMA scheme, each of the users have an access to 50 Mbps of bandwidth
- d. Using CDMA scheme, each of the users have an access to 100 Kbps of bandwidth

Question 93

Complete

Marked out of 1.00

Reverse Address Resolution protocol

- a. maps public address to private address
- b. maps private address to public address
- c. maps MAC address to IP address
- d. maps IP address to MAC address

Question 94

Complete

Marked out of 1.00

Which is not true for Packet switching?

- a. The delivery of these packets becomes easy when complicated protocols are used.
- b. A dedicated path is followed throughout the session.
- c. Multiple users can use the same channel while transferring their packets.
- d. Installation costs of packet switching are expensive.

Question 95

Complete

Marked out of 1.00

Dynamic Host Configuration Protocol issues to the client.

- a. IP address
- b. Port address
- c. None of these
- d. MAC address

Question 96

Complete

Marked out of 1.00

Which of the following is a set of rules that governs the data communication in a computer network

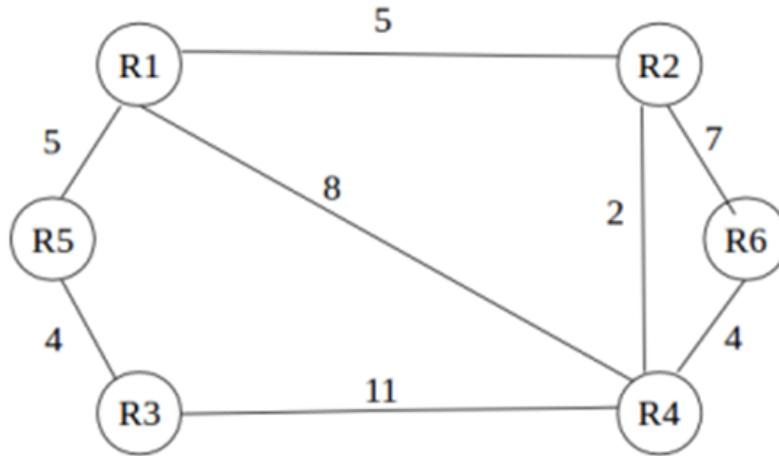
- a. None of these
- b. Activity standards
- c. Protocols
- d. RFCs

Question 97

Complete

Marked out of 1.00

Explain the distance vector routing algorithm by running it for the following graph. Calculate the shortest distance from source R1 to destination R6.



- a. 12
- b. 10
- c. 11
- d. None of these

Question 98

Complete

Marked out of 1.00

Transport layer deals with.....communication.

- a. person-to-person
- b. process-to-process
- c. application-to-application
- d. node-to-node

Question 99

Complete

Marked out of 1.00

Identify the correct order in which the following actions take place in an interaction between a web browser and a web server

- (1) The web browser requests a web page using HTTP
- (2) The web browser establishes a TCP connection with the web browser
- (3) The web browser sends the requested web page using HTTP
- (4) The web browser resolves the domain name using DNS

- a. None of these
- b. 4,2,1,3
- c. 4,3,1,2
- d. 3,2,1,4

Question 100

Complete

Marked out of 1.00

Which address identifies a process on a host?

- a. specific address
- b. physical address
- c. port address
- d. logical address

[◀ Announcements](#)[Jump to...](#)[Mid-Semester Exam_CS301 \(GNR+Diu\)_06-11-2023_9.30 AM to 11.30 AM ►](#)

Computer Networks | Set 1

Following questions have been asked in GATE CS 2012 exam.

1) The protocol data unit(PDU) for the application layer in the Internet stack is

- (A) Segment
- (B) Datagram
- (C) Message
- (D) Frame

Answer (C)

The **Protocol Data Unit** for Application layer in the **Internet Stack (or TCP/IP)** is called Message.

2) Which of the following transport layer protocols is used to support electronic mail?

- (A) SMTP
- (B) IP
- (C) TCP
- (D) UDP

Answer (C)

E-mail uses **SMTP** as application layer protocol. SMTP uses **TCP** as transport layer protocol.

3) In the IPv4 addressing format, the number of networks allowed under Class C addresses is

- (A) 2^{14}
- (B) 2^7
- (C) 2^{21}
- (D) 2^{24}

Answer (C)

In class C, 8 bits are reserved for Host Id and 24 bits are reserved for Network Id. Out of these 24 Network Id bits, the leading 3 bits are fixed as 110. So remaining 21 bits can be used for different networks. See [this](#) for more details.

4) An Internet Service Provider(ISP) has the following chunk of CIDR-based IP addresses available with it:245.248.128.0/20. The ISP wants to give half of this chunk of addresses to Organization A, and a quarter to Organization B, while retaining the remaining with itself. Which of the following is a valid allocation of addresses to A and B?

- (A) 245.248.136.0/21 and 245.248.128.0/22
- (B) 245.248.128.0/21 and 245.248.128.0/22
- (C) 245.248.132.0/22 and 245.248.132.0/21
- (D) 245.248.136.0/22 and 245.248.132.0/21

Answer (A)

Since **routing prefix** is 20, the ISP has $2^{(32-20)}$ or 2^{12} addresses. Out of these 2^{12} addresses, half (or 2^{11}) addresses have to be given to organization A and quarter (2^{10}) addresses have to be given to organization B. So routing prefix for organization A will be 21. For B, it will be 22. If we see all options given in question, only options (A) and (B) are left as only these options have same number of routing prefixes. Now we need to choose from option (A) and (B).

To assign addresses to organization A, ISP needs to take first 20 bits from 245.248.128.0 and fix the 21st bit as 0 or 1. Similarly, ISP needs to fix 21st and 22nd bits for organization B. If we take a

closer look at the options (A) and (B), we can see the 21st and 22nd bits for organization B are considered as 0 in both options. So 21st bit of organization A must be 1. Now take the first 20 bits from 245.248.128.0 and 21st bit as 1, we get addresses for organization A as 245.248.136.0/21

Computer Networks | Set 2

Following Questions have been asked in GATE 2012 CS exam.

1) Consider a source computer (S) transmitting a file of size 106 bits to a destination computer (D) over a network of two routers (R1 and R2) and three links (L1, L2 and L3). L1 connects S to R1; L2 connects R1 to R2; and L3 connects R2 to D. Let each link be of length 100km. Assume signals travel over each link at a speed of 10^8 meters per second. Assume that the link bandwidth on each link is 1Mbps. Let the file be broken down into 1000 packets each of size 1000 bits. Find the total sum of transmission and propagation delays in transmitting the file from S to D?

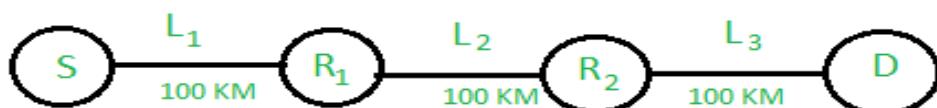
(A) 1005ms

(B) 1010ms

(C) 3000ms

(D) 3003ms

Answer (A)



Propagation delay to travel from S to R₁ = (Distance) / (Link Speed) = $10^5/10^8 = 1\text{ms}$

Total propagation delay to travel from S to D = $3 * 1 \text{ ms} = 3\text{ms}$

Total transmission delay for 1 packet = $3 * (\text{Number of Bits}) / \text{Bandwidth} = 3 * (1000/10^6) = 3\text{ms}$.

The first packet will take 6ms to reach D. While first packet was reaching D, other packets must have been processing in parallel. So D will receive remaining packets 1 packet per 1 ms from R₂. So remaining 999 packets will take 999 ms. And total time will be $999 + 6 = 1005 \text{ ms}$

2) Consider an instance of TCP's Additive Increase Multiplicative Decrease(AIMD) algorithm where the window size at the start of the slow start phase is 2 MSS and the threshold at the start of the first transmission is 8 MSS. Assume that a time out occurs during the fifth transmission. Find the congestion window size at the end of the tenth transmission.

- (A) 8 MSS
- (B) 14 MSS
- (C) 7 MSS
- (D) 12 MSS

Answer (C)

Since **Slow Start** is used, window size is increased by the number of segments successfully sent. This happens until either threshold value is reached or time out occurs. In both of the above situations **AIMD** is used to avoid congestion. If threshold is reached, window size will be increased linearly. If there is timeout, window size will be reduced to half.

Window size for 1st transmission = 2 MSS

Window size for 2nd transmission = 4 MSS

Window size for 3rd transmission = 8 MSS

threshold reached, increase linearly (according to AIMD)

Window size for 4th transmission = 9 MSS

Window size for 5th transmission = 10 MSS

time out occurs, resend 5th with window size starts with as slow start.

Window size for 6th transmission = 2 MSS

Window size for 7th transmission = 4 MSS

threshold reached, now increase linearly (according to AIMD)

Additive Increase: 5 MSS (since 8 MSS isn't permissible anymore)

Window size for 8th transmission = 5 MSS

Window size for 9th transmission = 6 MSS

Window size for 10th transmission = 7 MSS

Computer Networks | Set 3

Following Questions have been asked in GATE 2011 CS exam.

- 1) A layer-4 firewall (a device that can look at all protocol headers up to the transport layer) CANNOT**
- (A) block HTTP traffic during 9:00PM and 5:00AM
 - (B) block all ICMP traffic
 - (C) stop incoming traffic from a specific IP address but allow outgoing traffic to same IP
 - (D) block TCP traffic from a specific user on a specific IP address on multi-user system during 9:00PM and 5:00AM

Answer (A)

HTTP is an application layer protocol. Since firewall is at layer 4, it cannot block HTTP data.

2) Consider different activities related to email.

m1:Send an email from a mail client to mail server

m2:Download an email from mailbox server to a mail client

m3:Checking email in a web browser

Which is the applicable level protocol user in each activity?

- (A) m1:HTTP, m2:SMTP, m3:POP
- (B) m1:SMTP, m2:FTP, m3:HTTP
- (C) m1:SMTP, m2:POP, m3:HTTP
- (D) m1:POP, m2:SMTP, m3:IMAP

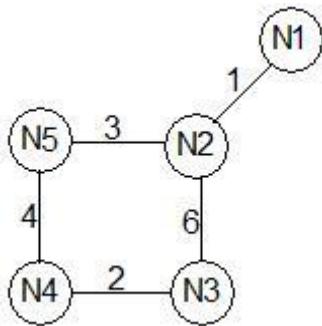
Answer (C)

Simple Mail Transfer Protocol (SMTP) is typically used by user clients for sending mails.

Post Office Protocol (POP) is used by clients for receiving mails.

Checking mails in web browser is a simple HTTP process.

3) Consider a network with five nodes, N1 to N5, as shown below.



The network uses a Distance Vector Routing protocol. Once the routes have stabilized, the distance vectors at different nodes are as following.

N1:(0, 1, 7, 8, 4)

N2:(1, 0, 6, 7, 3)

N3:(7, 6, 0, 2, 6)

N4:(8, 7, 2, 0, 4)

N5:(4, 3, 6, 4, 0)

Each distance vector is the distance of the best

known path at that instance to nodes, N1 to N5, where the distance to itself is 0. Also, all links are symmetric and the cost is identical in both directions. In each round, all nodes exchange their distance vectors with their respective neighbours. Then all nodes update their distance vectors. In between two rounds, any change in cost of a link will cause the two incident nodes to change only that entry in their distance vectors.

The cost of link N2-N3 reduces to 2 (in both directions). After the next round of update what will be the new distance vector at node, N3?

- (A) (3, 2, 0, 2, 5)
- (B) (3, 2, 0, 2, 6)
- (C) (7, 2, 0, 2, 5)
- (D) (7, 2, 0, 2, 6)

Answer (A)

In the next round, every node will send and receive distance vectors to and from neighbors, and update its distance vector.

N3 will receive (1, 0, 2, 7, 3) from N2 and it will update distances to N1 and N5 as 3 and 5 respectively.

4) After the update in the previous question, the link N1-N2 goes down. N2 will reflect this change immediately in its distance vector as cost, ∞ . After the NEXT ROUND of update, what will be cost to N1 in the distance vector of N3?

- (A) 3
- (B) 9

(C) 10

(D) ∞

Answer (C)

In the next round, N3 will receive distance from N2 to N1 as infinite. It will receive distance from N4 to N1 as 8. So it will update distance to N1 as $8 + 2$.

Computer Networks | Set 4

Following Questions have been asked in GATE 2010 CS exam.

1) One of the header fields in an IP datagram is the Time to Live (TTL) field. Which of the following statements best explains the need for this field?

- (A) It can be used to prioritize packets
- (B) It can be used to reduce delays
- (C) It can be used to optimize throughput
- (D) It can be used to prevent packet looping

Answer (D)

Time to Live can be thought as an upper bound on the time that an IP datagram can exist in the network. The purpose of the TTL field is to avoid a situation in which an undeliverable datagram keeps circulating.

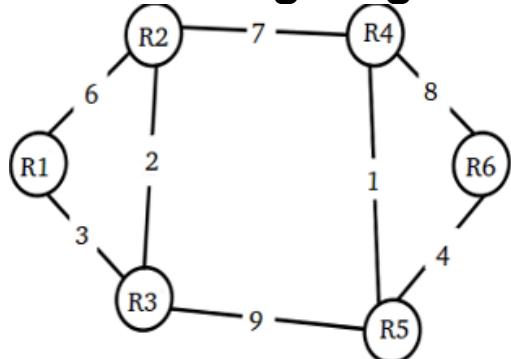
2) Suppose computers A and B have IP addresses 10.105.1.113 and 10.105.1.91 respectively and they both use the same netmask N. Which of the values of N given below should not be used if A and B should belong to the same network?

- (A) 255.255.255.0
- (B) 255.255.255.128
- (C) 255.255.255.192
- (D) 255.255.255.224
- (D)

The last octets of IP addresses of A and B are 113 (01110001) and 91 (01011011). The netmask in option (D) has first three bits set in last octet. If netmask has

first 3 bits set, then these bits must be same in A and B, but that is not the case. In simple words, we can say option (D) is not a valid netmask because doing binary '&' of it with addresses of A and B doesn't give the same network address. It must be same address as A and B are on same network. See [this](#) for more details.

3) Consider a network with 6 routers R1 to R6 connected with links having weights as shown in the following diagram



All the routers use the distance vector based routing algorithm to update their routing tables. Each router starts with its routing table initialized to contain an entry for each neighbour with the weight of the respective connecting link. After all the routing tables stabilize, how many links in the network will never be used for carrying any data?

- (A) 4
- (B) 3
- (C) 2
- (D) 1

Answer (C)

We can check one by one all shortest distances. When we check for all shortest distances for R_i we don't need to check its distances to R_0 to R_{i-1} because the network

graph is undirected.

Following will be distance vectors of all nodes.

Shortest Distances from R1 to R2, R3, R4, R5 and R6

R1 (5, 3, 12, 12, 16)

Links used: R1-R3, R3-R2, R2-R4, R3-R5, R5-R6

Shortest Distances from R2 to R3, R4, R5 and R6

R2 (2, 7, 8, 12)

Links used: R2-R3, R2-R4, R4-R5, R5-R6

Shortest Distances from R3 to R4, R5 and R6

R3 (9, 9, 13)

Links used: R3-R2, R2-R4, R3-R5, R5-R6

Shortest Distances from R4 to R5 and R6

R4 (1, 5)

Links used: R4-R5, R5-R6

Shortest Distance from R5 to R6

R5 (4)

Links Used: R5-R6

If we mark, all the used links one by one, we can see that following links are never used.

R1-R2

R4-R6

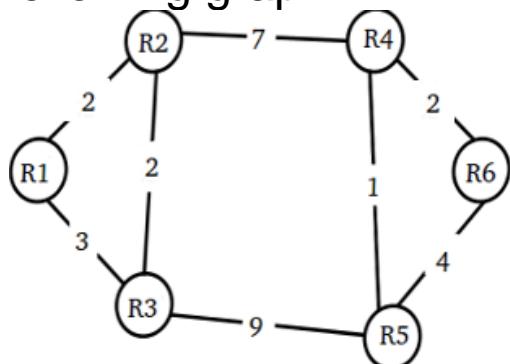
4) Suppose the weights of all unused links in the previous question are changed to 2 and the distance

vector algorithm is used again until all routing tables stabilize. How many links will now remain unused?

- (A) 0
- (B) 1
- (C) 2
- (D) 3

Answer (B)

After the weights of unused links () are changed to following graph.



Following will be distance vectors of all nodes

R1 (2, 3, 9, 10, 11)

Links used: R1-R2, R1-R3, R2-R4, R4-R5, R4-R6

R2 (2, 7, 8, 9)

Links used: R2-R3, R2-R4, R4-R5, R4-R6

R3 (9, 9, 11)

Links used: R3-R2, R2-R4, R3-R5, R4-R6

R4 (1, 2)

Links used: R4-R5, R4-R6

R5 (3)

Links Used: R5-R4, R4-R6

If we mark, all the used links one by one, we can see that all links are used except the following link

R5-R6

Computer Networks | Set 5

Following questions have been asked in GATE CS 2005 exam.

1) Packets of the same session may be routed through different paths in:

- (a) TCP, but not UDP
- (b) TCP and UDP
- (c) UDP, but not TCP
- (d) Neither TCP nor UDP

Answer (b)

Packet is the Network layer **Protocol Data Unit (PDU)**. TCP and UDP are Transport layer protocols. Packets of same session may be routed through different routes. Most networks don't use static routing, but use some form of adaptive routing where the paths used to route two packets for same session may be different due to congestion on some link, or some other reason.

2) The address resolution protocol (ARP) is used for:

- (a) Finding the IP address from the DNS
- (b) Finding the IP address of the default gateway
- (c) Finding the IP address that corresponds to a MAC

address

- (d) Finding the MAC address that corresponds to an IP address

Answer (d)

Address Resolution Protocol (ARP) is a request and reply protocol used to find MAC address from IP address.

3) The maximum window size for data transmission using the selective reject protocol with n-bit frame sequence numbers is:

- (a) 2^n
- (b) 2^{n-1}
- (c) $2^n - 1$
- (d) 2^{n-2}

Answer (b)

In **Selective Reject (or Selective Repeat)**, maximum size of window must be half of the maximum sequence number.

4) In a network of LANs connected by bridges, packets are sent from one LAN to another through intermediate bridges. Since more than one path may exist between two LANs, packets may have to be routed through multiple bridges. Why is the spanning tree algorithm used for bridge-routing?

- (a) For shortest path routing between LANs
- (b) For avoiding loops in the routing paths
- (c) For fault tolerance
- (d) For minimizing collisions

Answer (b)

The main idea for using Spanning Trees is to avoid loops. See [Spanning Tree Protocol](#) for more details.

Computer Networks | Set 6

Following questions have been asked in GATE CS 2005 exam.

1) An organization has a class B network and wishes to form subnets for 64 departments. The subnet mask would be:

- (a) 255.255.0.0
- (b) 255.255.64.0
- (c) 255.255.128.0
- (d) 255.255.252.0

Answer (d)

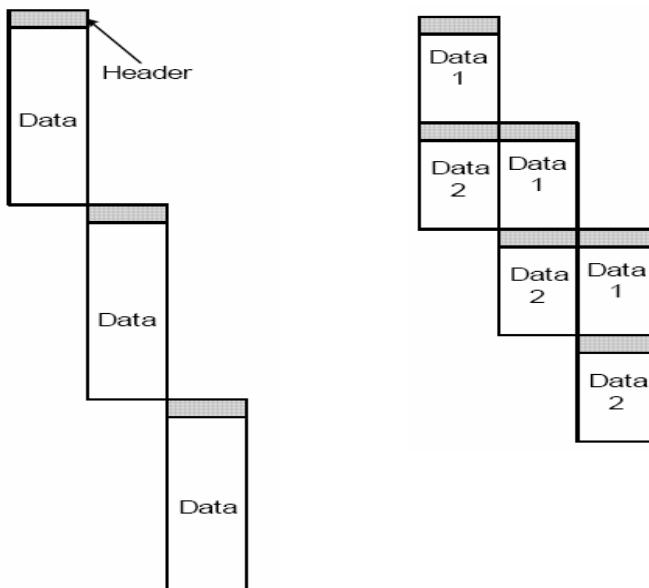
The size of network ID is 16 bit in class B networks. So bits after 16th bit must be used to create 64 departments. Total 6 bits are needed to identify 64 different departments. Therefore, subnet mask will be 255.255.252.0.

2) In a packet switching network, packets are routed from source to destination along a single path having two intermediate nodes. If the message size is 24 bytes and each packet contains a header of 3 bytes, then the optimum packet size is:

- (a) 4
- (b) 6
- (c) 7
- (d) 9

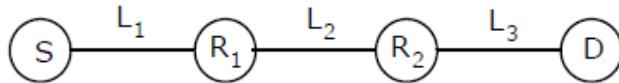
Answer (d)

Dividing a message into packets may decrease the transmission time due to parallelism as shown in the following figure.



But after a certain limit reducing the packet size may increase the transmission time also.

Following figure shows the situation given in question.



Let transmission time to transfer 1 byte for all nodes be t . The first packet will take time = (packet size)*3*t. After the first packet reaches the destination, remaining packets will take time equal to (packet size)*t due to parallelism.

If we use 4 bytes as packet size, there will be 24 packets

$$\begin{aligned}\text{Total Transmission time} &= \text{Time taken by first packet} + \\ &\quad \text{Time taken by remaining packets} \\ &= 3*4*t + 23*4*t = 104t\end{aligned}$$

If we use 6 bytes as packet size, there will be 8 packets

$$\text{Total Transmission time} = 3*6*t + 7*6*t = 60t$$

If we use 7 bytes as packet size, there will be 6 packets

$$\text{Total Transmission time} = 3*7*t + 5*7*t = 56t$$

If we use 9 bytes as packet size, there will be 4 packets

$$\text{Total Transmission time} = 3*9*t + 3*9*t = 54t$$

3) Suppose the round trip propagation delay for a 10 Mbps Ethernet having 48-bit jamming signal is 46.4 ms. The minimum frame size is:

- (a) 94
- (b) 416
- (c) 464
- (d) 512

Answer (c)

Transmission Speed = 10Mbps.

Round trip propagation delay = 46.4 ms

$$\begin{aligned}\text{The minimum frame size} &= (\text{Round Trip Propagation Delay}) * (\text{Transmission Speed}) \\ &= 10*(10^6)*46.4*(10^{-3}) = 464 * 10^3 = 464 \text{ Kbit}\end{aligned}$$

The concept behind the above formula is collision detection. Consider a situation where a node A wants to send a frame to another node B. When Node A begins transmitting, the signal must propagate the network length. In the worst-case collision scenario, Node B begins to transmit just before the signal for Node A's frame reaches it. The collision signal of Node A and Node B's frame must travel back to Node A for Node A to detect that a collision has occurred.

The time it takes for a signal to propagate from one end of the network to the other is known as the propagation delay. In this worst-case collision scenario, the time that it takes for Node A to detect that its frame has been collided with is twice the propagation delay. Node A's frame must travel all the way to Node B, and then the collision signal must travel all the way from Node B back to Node A. This time is known as the slot time. An Ethernet node must be transmitting a frame for the slot time for a collision with that frame to be detected. This is the reason for the minimum Ethernet frame size.

Computer Networks | Set 7

Following questions have been asked in GATE CS 2008 exam.

1) Which of the following system calls results in the sending of SYN packets?

- (A) socket
- (B) bind
- (C) listen
- (D) connect

Answer (D)

socket() creates a new socket of a certain socket type, identified by an integer number, and allocates system resources to it.

bind() is typically used on the server side, and associates a socket with a socket address structure, i.e. a specified local port number and IP address.

listen() is used on the server side, and causes a bound TCP socket to enter listening state.

connect() is used on the client side, and assigns a free local port number to a socket. In case of a TCP socket, it causes an attempt to establish a new TCP connection.

When *connect()* is called by client, following three way handshake happens to establish the connection in TCP.

1) The client requests a connection by sending a SYN (synchronize) message to the server.

- 2) The server acknowledges this request by sending SYN-ACK back to the client.
- 3) The client responds with an ACK, and the connection is established.

Sources: [Berkeley sockets](#), [TCP Connection Establishment and Termination](#)

- 2) In the slow start phase of the TCP congestion control algorithm, the size of the congestion window**
- (A) does not increase
 - (B) increases linearly
 - (C) increases quadratically
 - (D) increases exponentially

Answer (D)

Although the name is slow start, during the slow start phase, window size is increased by the number of segments acknowledged, which means window size grows exponentially. This happens until either an acknowledgment is not received for some segment or a predetermined threshold value is reached. See [this](#) for more details.

- 3) If a class B network on the Internet has a subnet mask of 255.255.248.0, what is the maximum number of hosts per subnet?**

- (A) 1022
- (B) 1023
- (C) 2046
- (D) 2047

Answer (C)

The binary representation of subnet mask is 11111111.11111111.1111000.00000000. There are 21 bits set in subnet. So 11 (32-21) bits are left for host ids. Total possible values of host ids is $2^{11} = 2048$. Out of these 2048 values, 2 addresses are reserved. The address with all bits as 1 is reserved as broadcast address and address with all host id bits as 0 is used as network address of subnet.

In general, the number of addresses usable for addressing specific hosts in each network is always $2^N - 2$ where N is the number of bits for host id.

Computer Networks | Set 8

Following questions have been asked in GATE CS 2008 exam.

1) What is the maximum size of data that the application layer can pass on to the TCP layer below?

- (A) Any size
- (B) 2^{16} bytes-size of TCP header
- (C) 2^{16} bytes
- (D) 1500 bytes

Answer (A)

Application layer can send any size of data. There is no limit defined by standards. The lower layers divides the data if needed.

2) A client process P needs to make a TCP connection to a server process S. Consider the

following situation: the server process S executes a socket(), a bind() and a listen() system call in that order, following which it is preempted.

Subsequently, the client process P executes a socket() system call followed by connect() system call to connect to the server process S. The server process has not executed any accept() system call.

Which one of the following events could take place?

- (A) connect () system call returns successfully
- (B) connect () system call blocks
- (C) connect () system call returns an error
- (D) connect () system call results in a core dump

Answer (C)

Since accept() call is not executed then connect () gets no response for a time stamp to wait & then return no response server error.

3) A computer on a 10Mbps network is regulated by a token bucket. The token bucket is filled at a rate of 2Mbps. It is initially filled to capacity with 16Megabits. What is the maximum duration for which the computer can transmit at the full 10Mbps?

- (A) 1.6 seconds
- (B) 2 seconds
- (C) 5 seconds
- (D) 8 seconds

Answer (B)

New tokens are added at the rate of r bytes/sec which is

2Mbps in the given question.

Capacity of the **token bucket** (b) = 16 Mbits

Maximum possible transmission rate (M) =
10Mbps

So the maximum burst time = $b/(M-r) = 16/(10-2) = 2$ seconds

In the above formula, r is subtracted from M to calculate the maximum burst time. The reason for this subtraction is, new tokens are added at the rate of r while transmission happens at maximum transmission rate M.

Computer Networks | Set 9

Following questions have been asked in GATE CS 2007 exam.

1) Which one of the following uses UDP as the transport protocol?

- (A) HTTP
- (B) Telnet
- (C) DNS
- (D) SMTP

Answer (C)

DNS primarily uses User Datagram Protocol (UDP) on port number 53 to serve requests. DNS queries consist of a single UDP request from the client followed by a single UDP reply from the server.

2) In Ethernet when Manchester encoding is used, the bit rate is:

- (A) Half the baud rate.
- (B) Twice the baud rate.

(C) Same as the baud rate.

(D) none of the above

Answer (A)

In **Manchester encoding**, the **bitrate** is half of the **baud rate**.

3) There are n stations in a slotted LAN. Each station attempts to transmit with a probability p in each time slot. What is the probability that ONLY one station transmits in a given time slot?

(A) $(1-p)^{n-1}$

(B) $np(1-p)^{n-1}$

(C) $p(1-p)^{n-1}$

(D) $1-(1-p)^{n-1}$

Answer (B)

The probability that a particular station transmits and no body else transmits = $p * (1-p)^{n-1}$

The probability that any station can transmit =

$n * (\text{probability that a particular station transmits}) =$

$n * p * (1-p)^{n-1}$. See [this](#) for details.

4) In a token ring network the transmission speed is 10^7 bps and the propagation speed is 200 metres/micro second. The 1-bit delay in this network is equivalent to:

(A) 500 metres of cable.

(B) 200 metres of cable.

(C) 20 metres of cable.

(D) 50 metres of cable.

Answer (C)

Transmission delay for 1 bit $t = 1/(10^7) = 0.1$ micro

seconds.

200 meters can be traveled in 1 micro second.

Therefore, in 0.1 micro seconds, 20 meters can be traveled.

Computer Networks | Set 10

Following questions have been asked in GATE CS 2007 exam.

1) The address of a class B host is to be split into subnets with a 6-bit subnet number. What is the maximum number of subnets and the maximum number of hosts in each subnet?

- (A) 62 subnets and 262142 hosts.
- (B) 64 subnets and 262142 hosts.
- (C) 62 subnets and 1022 hosts.
- (D) 64 subnets and 1024 hosts.

Answer (C)

$$\text{Maximum number of subnets} = 2^6 - 2 = 62.$$

Note that 2 is subtracted from 2^6 . The RFC 950 specification reserves the subnet values consisting of all zeros (see above) and all ones (broadcast), reducing the number of available subnets by two.

$$\text{Maximum number of hosts is } 2^{10} - 2 = 1022.$$

2 is subtracted for Number of hosts is also. The address with all bits as 1 is reserved as broadcast address and address with all host id bits as 0 is used as network address of subnet.

In general, the number of addresses usable for addressing specific hosts in each network is always $2^N - 2$ where N is the number of bits for host id.

See [this](#) for details

2) The message 11001001 is to be transmitted using the CRC polynomial $x^3 + 1$ to protect it from errors. The message that should be transmitted is:

- (A) 11001001000
- (B) 11001001011
- (C) 11001010
- (D) 110010010011

Answer (B)

The polynomial x^3+1 corresponds to divisor is 1001.

11001001 000 <--- input right padded by 3 bits

1001 <--- divisor

01011001 000 <---- XOR of the above 2

1001 <--- divisor

00010001 000

1001

00000011 000

10 01

00000001 010

1 001

00000000 011 <----- remainder (3 bits)

See this for division process.

After dividing the given message 11001001 by 1001, we get

the remainder as 011 which is the CRC. The transmitted data is, message + CRC which is 11001001 011.

3) The distance between two stations M and N is L kilometers. All frames are K bits long. The propagation delay per kilometer is t seconds. Let R bits/second be the channel capacity. Assuming that processing delay is negligible, the minimum number of bits for the sequence number field in a frame for maximum utilization, when the sliding window protocol is used, is:

(A) $\left\lceil \log_2 \frac{2LtR + 2K}{K} \right\rceil$

(B) $\left\lceil \log_2 \frac{2LtR}{K} \right\rceil$

(C) $\left\lceil \log_2 \frac{2LtR + K}{K} \right\rceil$

(D) $\left\lceil \log_2 \frac{2LtR + K}{2K} \right\rceil$

Answer (C)

Distance between stations = L KM

Propagation delay per KM = t seconds

Total propagation delay = Lt seconds

Frame size = k bits

Channel capacity = R bits/second

Transmission Time = k/R

Let n be the window size.

$$\begin{aligned}\text{Utilization} &= n / (1 + 2a) \text{ where } a = \frac{\text{Propagation time}}{\text{transmission time}} \\ &= n / [1 + 2Ltr/k] \\ &= nk / (2Ltr + k)\end{aligned}$$

For maximum utilization: $nk = 2LtR + k$

Therefore, $n = (2LtR+k)/k$

Number of bits needed for n frames is Log₂n.

See this for details.

4) Match the following:

(P) SMTP (1) Application layer

(Q) BGP (2) Transport layer

(R) TCP (3) Data link layer

(S) PPP (4) Network layer

(5) Physical layer

(A) P – 2 Q – 1 R – 3 S – 5

(B) P – 1 Q – 4 R – 2 S – 3

(C) P-1 Q-4 R-2 S-5

(D) P - 2 Q - 4 R - 1 S - 3

Answer (B)

SMTP is an application layer protocol used for e-mail transmission.

TCP is a core transport layer protocol.

BGP is a network layer protocol backing the core routing decisions on the Internet

PPP is a data link layer protocol commonly used in establishing a direct connection between two networking nodes.

Computer Networks | Set 11

Following questions have been asked in GATE CS 2006 exam.

1) Station A uses 32 byte packets to transmit messages to Station B using a sliding window protocol. The round trip delay between A and B is 80 milliseconds and the bottleneck bandwidth on the path between A and B is 128 kbps. What is the optimal window size that A should use?

- (A) 20
- (B) 40
- (C) 160
- (D) 320

Answer (B)

Round Trip propagation delay = 80ms

Frame size = 32×8 bits

Bandwidth = 128kbps

Transmission Time = $32 \times 8 / (128) \text{ ms} = 2 \text{ ms}$

Let n be the window size.

Utilization = $n/(1+2a)$ where a = Propagation time / transmission time

$$= n/(1+80/2)$$

For maximum utilization: $n = 41$ which is close to option (B)

2) Two computers C1 and C2 are configured as follows. C1 has IP address 203.197.2.53 and netmask 255.255.128.0. C2 has IP address 203.197.75.201 and netmask 255.255.192.0. which one of the following statements is true?

- (A) C1 and C2 both assume they are on the same network
- (B) C2 assumes C1 is on same network, but C1 assumes C2 is on a different network
- (C) C1 assumes C2 is on same network, but C2 assumes C1 is on a different network
- (D) C1 and C2 both assume they are on different networks.

Answer (C)

Network Id of C1 = bitwise '&' of IP of C1 and subnet mask of C1

$$\begin{aligned} &= (203.197.2.53) \& \\ &(255.255.128.0) \end{aligned}$$

$$= 203.197.0.0$$

C1 sees network ID of C2 as bitwise '&' of IP of C2 and subnet mask of C1

$$\begin{aligned} &= (203.197.75.201) \& \\ &(255.255.128.0) \\ &= 203.197.0.0 \end{aligned}$$

which is same as Network Id of C1.

Network Id of C2 = bitwise '&' of IP of C2 and subnet mask of C2

$$\begin{aligned} &= (203.197.75.201) \& \\ &(255.255.192.0) \\ &= 203.197.64.0 \end{aligned}$$

C2 sees network ID of C1 as bitwise '&' of IP of C1 and subnet mask of C2

$$\begin{aligned} &= (203.197.2.53) \& \\ &(255.255.192.0) \\ &= 203.197.0.0 \end{aligned}$$

which is different from Network Id of C2.

Therefore, C1 assumes C2 is on same network, but C2 assumes C1 is on a different network.

3) Station A needs to send a message consisting of

9 packets to Station B using a sliding window (window size 3) and go-back-n error control strategy. All packets are ready and immediately available for transmission. If every 5th packet that A transmits gets lost (but no acks from B ever get lost), then what is the number of packets that A will transmit for sending the message to B?

- (A) 12
- (B) 14
- (C) 16
- (D) 18

Answer (C)

Total 16 packets are sent. See following table for sequence of events. Since go-back-n error control strategy is used, all packets after a lost packet are sent again.

Sender	Receiver
1	
2	1
3	2
4	3
5	4
6	
7	6
	7

[Timeout for 5]

5

6

5

7

6

8

9

8

9

[Timeout for 7]

7

8

7

9

8

[Timeout for 9]

9

9

Computer Networks | Set 12

Following questions have been asked in GATE CS 2009 exam.

1) Let $G(x)$ be the generator polynomial used for CRC checking. What is the condition that should be satisfied by $G(x)$ to detect odd number of bits in error?

- (A) $G(x)$ contains more than two terms
- (B) $G(x)$ does not divide $1+x^k$, for any k not exceeding the frame length
- (C) $1+x$ is a factor of $G(x)$
- (D) $G(x)$ has an odd number of terms.

Answer (C)

Odd number of bit errors can be detected if $G(x)$ contains $(x+1)$ as a factor. See [this](#) for proof.

2) Frames of 1000 bits are sent over a 10^6 bps duplex link between two hosts. The propagation time is 25ms. Frames are to be transmitted into this link to maximally pack them in transit (within the link).

What is the minimum number of bits (i) that will be required to represent the sequence numbers distinctly? Assume that no time gap needs to be given between transmission of two frames.

- (A) $i=2$
- (B) $i=3$
- (C) $i=4$
- (D) $i=5$

Answer (D)

Transmission delay for 1 frame = $1000/(10^6) = 1 \text{ ms}$

Propagation time = 25 ms

The sender can atmost transfer 25 frames before the first frame reaches the destination.

The number of bits needed for representing 25 different frames = 5

3) Consider the data of previous question. Suppose that the sliding window protocol is used with the sender window size of 2^i where i is the number of bits identified in the previous question and acknowledgments are always piggybacked. After sending 2^i frames, what is the minimum time the sender will have to wait before starting transmission of the next frame? (Identify the closest choice ignoring the frame processing time.)

- (A) 16ms
- (B) 18ms
- (C) 20ms
- (D) 22ms

Answer (B)

Size of sliding window = $2^5 = 32$

Transmission time for a frame = 1ms

Total time taken for 32 frames = 32ms

The sender cannot receive acknowledgement before round trip time which is 50ms

After sending 32 frames, the minimum time the sender will have to wait before starting transmission of the next frame = $50 - 32 = 18$

Computer Networks | Set 13

These questions for practice purpose for GATE CS Exam.

Ques-1: How many bits are allocated for network id (NID) and host id(HID) in the IP address 25.193.155.233?

- (A) 24 bit for NID, 8 bits for HID
- (B) 8 bit for NID, 24 bits for HID
- (C) 16 bit for NID, 16 bits for HID
- (D) none

Explanation:

It is class A IP address and you know, that class A has 24 bits in HID and 8 bits in NID part.

So, option (B) is correct.

Ques-2: The bandwidth of the line is 1.5 Mbps with round trip time(RTT) as 45 milliseconds.If the size of each packet is 1 KB(kilobytes), then what is the efficiency in Stop and wait protocol?

- (A) 20.3
- (B) 10.0
- (C) 10.8
- (D) 11

Explanation:

So in order to find the efficiency, lets first calculate the propagation delay (p) and transmission delay(t). You know that,

$$(2*p) = RTT = 45 \text{ ms}$$

Therefore,

$$p = 45/2 = 22.5 \text{ ms}$$

Now, lets find transmission delay (t), you know that, $t = L/B$ (where, L = size of packet and B = bandwidth). Therefore,

$$L = 1KB = (1024*8) = 8192 \text{ bits}$$

And

$$B = (1.5*10^6)$$

So,

$$t = L/B = 8192/(1.5*10^6) = 5.461 \text{ ms}$$

Thus efficiency,

$$= 1/(1 + 2a) \quad \{ \text{where } a = p/t = 22.5/5.461 = 4.12 \}$$

$$= 1/(1 + 2*4.12)$$

$$= 0.108$$

$$= 10.8 \%$$

So, option (C) is correct.

Ques-3: A 1 km long broadcast LAN has bandwidth (BW) of 10^7 bps and uses CSMA/CD, then what is the minimum size of the packet?

Given:

$$\text{velocity}(v) = 2*10^8 \text{ m/sec}$$

- (A) 200 bits
- (B) 10
- (C) 50
- (D) 100

Explanation:

Here,

$$\text{Distance}(d) = 1 \text{ km} = 1*10^3 \text{ meter,}$$
$$\text{and BW} = 10^7 \text{ bps}$$

So,

$$p = \text{propagation delay}$$
$$= (d/v) = (10^3/2*10^8) = 5*10^{(-6)}$$

Therefore, minimum size of the packet is,

$$= (2*p*BW)$$
$$= 2*5*10^{(-6)}*10^7$$
$$= 100 \text{ bits}$$

So, option (D) is correct.

Ques-4: Consider Subnet mask of class B network on the internet is 255.255.240.0 then, what is the maximum number of hosts per subnets?

- (A) 4098
- (B) 4096
- (C) 4094
- (D) 4092

Explanation:

To find number of hosts per Subnet, you need to check number of zeroes in the host id part.

Here, Subnet mask

$$= 255.255.240.0$$
$$= 11111111.11111111.11110000.00000000$$

Therefore, number of zeroes is 12 so,

Number of hosts

$$\begin{aligned} &= (2^{12} - 2) \\ &= 4096 - 2 \\ &= 4094 \end{aligned}$$

Since, one of them is used for network id of entire network and the other one is used for the directed broadcast address of the network so, two is subtracted.

So, option (C) is correct.

Ques-5: What is the maximum window size for data transmission Using Selective Repeat protocol with n-bit frame sequence number?

- (A) 2^n
- (B) $2^n - 1$
- (C) 2^{n-2}
- (D) 2^{n-1}

Explanation:

Since, window size of sender(W) = window size of the receiver(R) and we know that,

$$\begin{aligned} (W + R) &= 2^n \\ \text{or, } (W + W) &= 2^n \text{ since, } (W = R) \\ \text{or, } 2*W &= 2^n \\ \text{or, } W &= 2^{n-1} \end{aligned}$$

Hence, option (D) is correct.

1

Computer Networks | Set 14

This question for practice purpose for GATE CS Exam.

Ques-1: Which of the following is not true about Subnetting?

- (A) It can be applied only for single network.
- (B) It is used to improve security.
- (C) Here, bits are borrowed from network ID portion.
- (D) Here, bits are borrowed from host ID portion.

Explanation:

In **Subnetting** bits are borrowed from host ID portion.
So, option (C) is false.

Ques-2: Which device uses logical addressing system?

- (A) Hub
- (B) Switch
- (C) bridge
- (D) Router

Explanation:

Since, **Router** can use logical as well as physical addressing system.

So, option (D) is true.

Ques-3: In which of the following protocol(s) it is possible for sender to receive acknowledgement for a packet that falls outside its current window?

- (A) Selective repeat protocol
- (B) Stop and wait protocol
- (C) Go back N protocol
- (D) All of the above

Explanation:

Here, All of the above protocols allow delayed acknowledgement. For more about these protocols see **Selective repeat protocol**, **Stop and wait protocol**, and **Go back N protocol**.

So, option (D) is true.

Ques-4: What is the network ID of the IP address 225.100.123.70?

- (A) 225.100.123.71
- (B) 225.100.123.72
- (C) 225.100.123.75
- (D) It does not have any network ID

Explanation:

It is **Class D IP** and class D IP does not have any network ID part, i.e., no division of network ID and host ID part. So, option (D) is true.

Ques-5: Which of the following is not true about Supernetting?

- (A) It is used to increase security.
- (B) It is applicable for two or more networks.
- (C) Bits are borrowed from network ID portion.
- (D) It is used to improve flexibility of IP address allotment.

Explanation:

Since, **Supernetting** can not be used to improve security of the network.

So, option (A) is untrue.