

Q1: DDR stands for

- (a) Dotted Decimal Representation
- (b) Decimal Dotted Representation
- (c) Decimal Divide Representation
- (d) None



Q2: Which of the following are correct?

- (a) class A is also called static IP addressing
- (b) IPV6 is of 256 bits
- (c) True range of first octet of class a is 1-127
- (d) All



Q3: Which layer does IP belong to?

- (a) Physical layer
- (b) Data Link Layer
- (c) Network layer
- (d) Transport Layer



Q4: No of hosts per network in class C type is?



Q5: A unicast message can

- a) Only be sent in same network
- b) only be sent in different network
- c) both A and B
- d) None



Q6: A host is connected to a department network which is part of a university network is a part of the internet. The largest network in which the ethernet address of the host is unique is?

- (a) The subnet to which the host belongs
- (b) The department network
- (c) The university network
- (d) The internet



Q7: 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



Q8: Convert IP address whose hexadecimal representation is C22F1582 to dotted.

- (a) 194.47.21.130
- (b) 194.47.15.130
- (c) 194.47.21.82
- (d) None of these



Q9: A network is divided into 4 subnets then how many additional IP addresses are lost?_____.



Q10: Loop back addresses best suits which of the following

- (a) 127.X.X.X
- (b) 127.255.255.255
- (c) 127.0.0.0
- (d) A but not B and C



Q11: Using a class C address with subnet mask 255.255.255.240 (/28), what is the last valid host IP Address?

- (a) 192.168.20.79
- (b) 192.168.20.93
- (c) 192.168.20.95
- (d) 192.168.20.94



Q12: Suppose computers A and B have IP addresses 10.105.1.113 and 10.105.1.91 respectively and they both use the same network M. Which of the following values of M 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



Q13: The direct broadcast address of the IP address 205.18.136.187 with subnet mask 255.255.255.240 is?

- (a) 205.18.136.187
- (b) 205.18.255.255
- (c) 205.18.136.255
- (d) 205.18.136.191



Q14: _____ is a process of borrowing bits from host ID part?

- a) subnetting
- b) supernetting
- c) aggregation
- d) B and C



Q15: In a network say X every host would virtually be in a different network having subnet mask to be _____?



Q16: For a class c network what are the no of hosts with subnet mask 255.255.255.224?



Q17: For the subnet mask in above question how many subnets are possible for a class C network?



Q18: In go back n protocol if the maximum windows size is 63, what is the range of the sequence number ?

- (a) 0 to 63
- (b) 1 to 64
- (c) 1 to 63
- (d) 0 to 64



Q19: Which of the below addressing method is dynamic and flexible?

- (a) Classful
- (b) CIDR
- (c) NONE
- (d) CIDR with classes



Q20: Which of the following is meaningful?

(a) $a.b.c.d/30$

(b) $a.b.c.d/31$

(c) $a.b.c.d/32$

(d) all



Q21: Sliding Window Protocol with Selective reject/ repeat gives better performance than other protocols when

- (a) Buffer is sufficient and bandwidth is limited
- (b) Buffer is moderate and bandwidth is sufficient
- (c) Buffer is moderate and bandwidth is limited
- (d) Buffer is sufficient and bandwidth is sufficient

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Q22: 6 bit sequence number is used in GO-back-N ARQ.
The allowable frames that can be transmitted by the sender
are

- (a) 63
- (b) 64
- (c) 65
- (d) 7



Q23: Rules for CIDR block allocation are

- (a) Blocks shouldn't be contiguous
- (b) Block should be in powers of 2
- (c) first ip address of the block must be evenly divisible by the size of block.
- (d) All of these



Q24: The message 11001001 is to be transmitted using 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



Q25: A bit stuffing based framing protocol uses an 8-bit delimiter pattern of 01111110. If the output bit string after stuffing is 01111100101, then the input bit string:

- (a) 0111110100
- (b) 0111110101
- (c) 0111111101
- (d) 0111111111



Q26: Applying constraints on packet sending of sender is roughly termed as

- (a) flow control
- (b) access control
- (c) error control
- (d) None of these



Q27: The minimum and maximum size of the Ethernet frame is

- (a) 0-1526
- (b) 46-1526
- (c) 64-1518
- (d) 72-1500



Q28: _____depends on speed of processor?

- (a) transmission delay
- (b) propagation delay
- (c) processing delay
- (d) queueing delay



Q29: With 10% increase in size of data packet the propagation delay

- a) Increases
- b) Decreases
- c) Remains same
- d) Unexpected behaviour



Q30: Which of following is the slow convergence algorithm?

- (a) Distance vector routing
- (b) Link state routing
- (c) Both (a) and (b)
- (d) None of these



Q31: If we send 10 packets with 0.6 error probability then total sent packets in stop and wait protocol is?

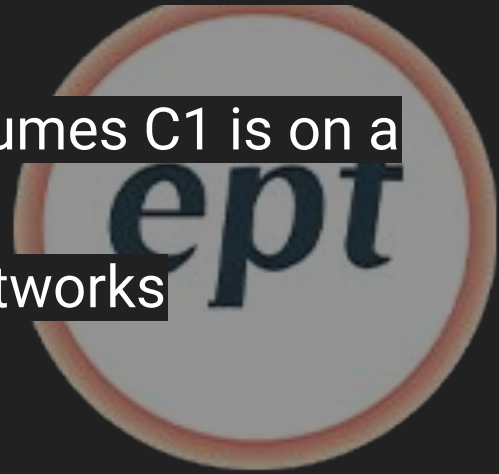


Q32: Determine the maximum length of the cable (in km) for transmitting data at a rate of 100 Mbps in ethernet Lan with frame size of 1000 bits. (Assume signal speed as 2×10^5 km/sec)_____.



Q33: 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



Q34: Which OSI layer establishes preamble and start frame delimiter as a part of its header

- (a) Physical layer
- (b) Data link layer
- (c) Network Layer
- (d) All of these



Q35: Resource reservation is a feature of

- (a) Both virtual circuit and circuit switching
- (b) Circuit switching
- (c) Packet switching
- (d) None of these



Q36: Which one of following fields of an IP header may be modified by typical IP router?

- (a) Checksum
- (b) Source address
- (c) Time to live
- (d) Length



Q37: 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



Q38: Which of following is false in case of ICMP protocol?

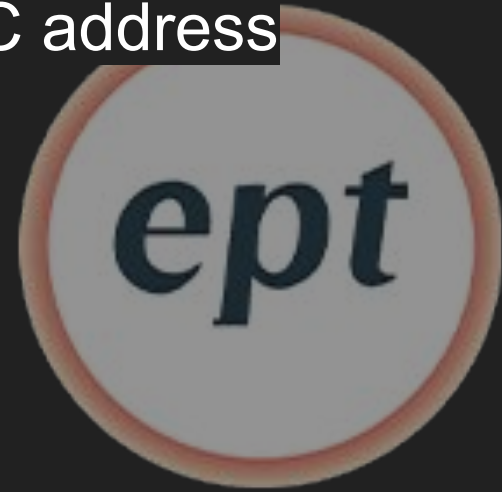
- (a) It is used for the reporting errors
- (b) Parameter problem message will be transmitted whenever the packet is in loop
- (c) Source quench message is required for packet
- (d) Time exceeded message is transmitted when the packet is in loop

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Q39: Which of following is false with respect to protocols?

- (a) ARP protocol is to get destination IP address
- (b) RARP protocol is to get IP address from MAC address.
- (c) RARP protocol is to get MAC address
- (d) ARP protocol is to map IP address to MAC address



Q40: Which of the following is NOT true?

- (a) BGP is an intra domain protocol
- (b) A path-vector routing protocol is a network routing protocol which maintains the path information that gets updated dynamically.
- (c) OSPF is a distance vector routing algorithm
- (d) All of these.



Q41: Which of the following is true:

- (a) stop and wait protocol is better than GBN in terms of retransmission.
- (b) if GBN has sender's window size as one it turns to stop and wait protocol.
- (c) optimal window size in sliding window protocol is $2a$.
- (d) all of these



Q42: ICMP error messages are transmitted by

- (a) router
- (b) Destination host
- (c) Both (a) and (b)
- (d) None of these



Q43: Which of the following is true about jamming signal

- (a) it is a combination of 47 bits.
- (b) it is used to prepare other stations for transmission.
- (c) it works on same frequency as data signals
- (d) None of these



Q44: Protocol field in IPv4 header is '17' then it indicates

- (a) TCP packet
- (b) ICMP packet
- (c) UDP packet
- (d) None of these



Q45: Fields which can't be changed by intermediate router in between in IPv4 protocol are

- (a) TTL value
- (b) checksum
- (c) Both (a) and (b)
- (d) None of these



Q46: The protocol data unit (PDU) for the application layer in the Internet stack is

- (a) segment
- (b) message
- (c) frame
- (d) datagram



Q 47: 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



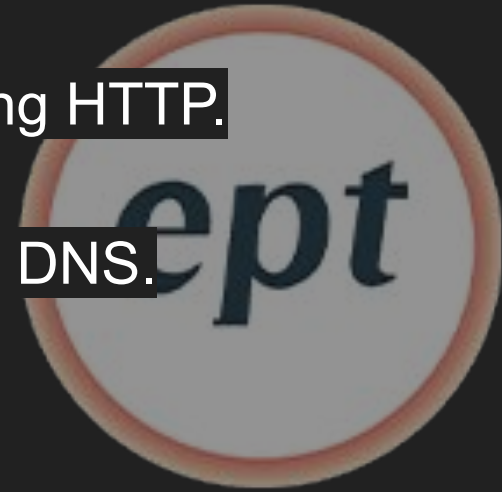
Q48: Identify the correct order in which the following actions take place in an interaction between a web browser and a web server.

a> The web browser requests a webpage using HTTP.

b>The web browser establishes a TCP connection with the web server.

c>The web server sends the requested webpage using HTTP.

d>The web browser resolves the domain name using DNS.



Q49: Which of the following explains TCP

- (a) supports full duplex connection.
- (b) it doesn't send negative acknowledgment.
- © supports broadcasting.
- (d) all of these.



Q50: An application layer is an abstraction layer that specifies the shared communications protocols and interface methods used by hosts in a communications network. Consider the following statements regarding various application layer protocols:

(S1) : BOOTP is a Host initialization protocol which is implemented using the Transmission Control Protocol (TCP) as transport protocol.

(S2) : Domain Name System (DNS) is Networking support protocol which uses User Data Protocol (UDP) as transport protocol.

(S3) : Simple Network Management Protocol (SNMP) is a Remote host management protocol which uses Transmission Control Protocol (TCP) as transport protocol.

Which of the following option is True?

(a) Only (S1) and (S2) are not correct.

(b) Only (S1) and (S3) are not correct.

(c) Only (S2) and (S3) are not correct.

(d) (S1), (S2) and (S3) are correct.



Q51: Choose the best matching between Group 1 and Group 2.

Group-1

Group-2

P. Data link

1. Ensures reliable transport of data
over a physical point-to-point link

Q. Network layer

2. Encoder/decodes data for physical
transmission

R. Transport layer

3. Allows end-to-end communication
between two processes
4. Routes data from one network
node to the next

(A) P-1, Q-4, R-3

(B) P-2, Q-4, R-1

(C) P-2, Q-3, R-1

(D) P-1, Q-3, R-2



Q52: Which one of the following uses TCP as the transport protocol?

- (a) HTTP
- (b) Telnet
- (c) DNS
- (d) SMTP



Q53: In the avoidance phase of the TCP congestion control algorithm, the size of the congestion window

- (a) Does not increase
- (b) Increase linearly
- (c) Increases quadratically
- (d) Increases exponentially



Q54: A sender uses the Stop-and-Wait ARQ protocol for reliable transmission of frames. Frames are of size 1000 bytes and the transmission rate at the sender is 80 Kbps (1Kbps = 1000 bits/second). Size of an acknowledgment is 100 bytes and the transmission rate at the receiver is 8 Kbps. The one-way propagation delay is 100 milliseconds. Assuming no frame is lost, the sender throughput is _____ bytes/second.



Q55: Suppose that the stop-and-wait protocol is used on a link with a bit rate of 64 kilobits per second and 20 milliseconds propagation delay. Assume that the transmission time for the acknowledgment and the processing time at nodes are negligible. Then the minimum frame size in bytes to achieve a link utilization of at least 50% is _____.



Q56: Which of the following are not true.

- (a) HTTP can have more than one connection.
- (b) DNS uses UDP at transport layer.
- (c) Default port number is 53 for telnet.
- (d) None of these



Q57: HTTP is

- (a) inband protocol
- (b) Stateless protocol
- (c) Default port number 81
- (d) all of these



Q58: SMTP is

- (a) Default port is 25
- (b) Textbase protocol
- (c) Pull protocol
- (d) Both (a) and (b)



Q59: A network has baud rate to be 80 bits per second what can be the bit rate?



Q60: Two hosts are connected via a packet switch with 107 bits per second links. Each link has a propagation delay of 20 microseconds. The switch begins forwarding a packet 35 microseconds after it receives the same. If 1000 bits of data are to be transmitted between the two hosts using a packet size of 5000 bits, the time elapsed between the transmission of the first bit of data and the reception of the last of the data in microsecond is _____.

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Q61: Mark all true statements

- a) Aloha comes under flow control protocols.
- b) In slotted aloha time is discrete and globally synchronized.
- c) Maximum efficiency is attained in pure aloha when value of G is 2.
- d) None of These.



Q62: Consider a network connected two systems located 8000 kilometers apart. The bandwidth of the network is 500×10^6 bits per second. The propagation speed of the media is 4×10^6 meters per second. It is needed to design a Go-Back-N sliding window protocol for this network. The average packet size is 107 bits. The network is to be used to its full capacity. Assume that processing delays at nodes are negligible. Then the minimum size in bits of the sequence number field has to be _____.



Q63: Which of the following transport layer protocols is used to support electronic mail?

- (a) SMTP
- (b) IP
- (c) TCP
- (d) UDP



Q64: Which one of the following socket API functions converts an unconnected active TCP socket into a passive socket?

- (a) Connect
- (b) Bind
- (c) Listen
- (d) Accept



Q65: In mesh topology with 5 participants what is the no of cables required?



1-a	11-d	21-c	31-25	41-a,b
2-a	12-d	22-a,d	32-1 km	42-c
3-c	13-d	23-b,c	33-c	43-d
4-254	14-a	24-b	34-a	44-c
5-c	15- ⁵ _{255.255.255.25}	25-b	35-a	45-d
6-d	16-30	26-a	36-a,c,d	46-b
7-c	17-8	27-c	37-a	47-a
8-a	18-a	28-c,d	38-c	48- d,b,a,c
9-6	19-b	29-c	39-a,c	49-a
10-d	20-a	30-a	40-a,c,d	50-b

51-a

61-b

52-a,b,d

62-8

53-b

63-SMTP

54-2500

64-c

55-320

65-10

56-c

57-a,b

58-d

59-40

60-1575

