Indian Institute of Information Technology, Vadodara

Course - Computer Networks
Course Code - CS208
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MidSem

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1. (i) Which of the following is required to communicate between two computers?
   a) Communications software
   b) Communications hardware
   c) Protocol
   d) Access to the medium
   e) All of the above

   (ii) Which answer correctly lists the OSI protocol data units(PDUs) in order?
   a) Data, Packet, Frame, Segment, Bit
   b) Bit, Data, Packet, Segment, Frame
   c) Data, Segment, Packet, Frame, Bit
   d) Bit, Frame, Segment, Packet, Data

   (iii) Which of the following is not a disadvantage of wireless LAN?
   a) Slower data transmission
   b) Higher error rate
   c) Interference from transmission of different computers
   d) All of the above

   (iv) Match the following:

a.	SMTP	(1)	Application
b.	BGP	(2)	Transport Layer
c.	TCP	(3)	Data-link Layer
d.	PPP	(4)	Network Layer
		(5)	Physical Layer

   a) a-2, b-1, c-3, d-4
   b) a-1, b-4, c-2, d-3
   c) a-1, b-4, c-2, d-5
   d) a-2, b-4, c-1, d-3
   e) None of the above

   (v) In the IPv4 addressing format, the number of networks allowed under Class C addresses
   a) 2^{14} b) 2^{7} c) 2^{21} d) 2^{24}

   (vi) 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 his field?

a) to prioritize packets
b) to reduce delays
c) to optimize throughput
d) to prevent packet looping

(vii) How equal access to the wire is managed in a collision-oriented environment such as the Ethernet?

a) The hosts are given equal access based on the circulation of a token; hosts can only transmit when they hold the token.
b) Hosts are given prioritized access to wire based on their MAC address.
c) Hosts are given equal access to the wire by being allowed to transmit at specified time intervals.
d) Hosts signal their desire to transmit by sending a contention alert.
e) Hosts check the wire for activity before attempting to send; if a collision happens they wait a random time period before attempting to send again.

(viii) Frames from one LAN can be transmitted to another LAN via the device

a) Router b) Bridge
c) Repeater d) Modern

(ix) Which of the following technique is used for fragment?

a) one of the pieces that results when a router divides an IP datagram into smaller pieces for transmission across a network that cannot handle the original datagram size
b) a technique used y protocols in which a lower level protocol accepts a message from a higher level protocol and places it in data portion of the low level frame
c) a technique used in best-effort deliver systems to avoid endlessly looping packets
d) All of the above
e) None of the above

(x) The dominant eigenvalue of a Markov matrix is

a) 0 b) 1 c) π d) ∞

2. Why would a protocol that uses the stop-and-wait mechanism have low throughput over satellite communications link?

3. We want to send a 1000KB file(K=1000 and B is Byte) in 1KB packets. The distance is 10km and the signal propagation speed is $2*10^5 km/sec$. The bandwidth is 1.5Mb/sec.(M=1,000,000). How long will it take to send the file?

4. Why was CSMA/CA developed?

5. Create a diagram of the NRZ, NRZI AND Manchester encodings for the it pattern "11010011".

6. What are the main advantages of *spread spectrum* technique?

"I must create a system, or be enslav'd by another Man's; I will not Reason and Compare: my business is to Create."

William Black

Answers