Tutorial 3 (Ethernet)

Name:

Class:

Please complete this worksheet and print it out.

The following questions are multiple choice. Please select from a–d.

B.3.1 The base bit rate of standard Ethernet is:

(a) 1 kbps (b) 1 Mbps
(c) 10 Mbps (d) 100 Mbps

B.3.2 The base bit rate of Fast Ethernet is:

(a) 1 kbps (b) 1 Mbps
(c) 10 Mbps (d) 100 Mbps

B.3.3 Standard Ethernet (Thick-wire Ethernet) is also known as:

(a) 10BASE2 (b) 10BASE5
(c) 10BASE-T (d) 10BASE-FL

B.3.4 Thin-wire Ethernet (Cheapernet) is also known as:

(a) 10BASE2 (b) 10BASE5
(c) 10BASE-T (d) 10BASE-FL

B.3.5 Standard Ethernet (Thick-wire Ethernet) uses which type of cable:

(a) Twisted-pair cable (b) Coaxial cable
(c) Fiber optic cable (d) Radio link

B.3.6 Thin-wire Ethernet (Cheapernet) uses which type of cable:

(a) Twisted-pair cable (b) Coaxial cable
(c) Fiber optic cable (d) Radio link

B.3.7 Which cable type cannot be used for 100BASE networks:

(a) Cat-3 (b) Cat-5

(c) Coaxial cable (d) Fiber optic

B.3.8 The IEEE standard for Ethernet is:

(a) IEEE 802.1 (b) IEEE 802.2
(c) IEEE 802.3 (d) IEEE 802.4

B.3.9 The main disadvantage of Ethernet is that:

(a) Computers must contend for the network
(b) It does not network well
(c) It is unreliable
(d) It is not secure

B.3.10 A MAC address has how many bits:

(a) 8 bits (b) 24 bits
(c) 32 bits (d) 48 bits

B.3.11 Which MAC address used for a broadcast:

(a) 00-00-00-00-00-00 (b) FF-FF-FF-FF-FF-FF
(c) 12-34-56-78-9A-BC (d) 11-11-11-11-11-11

B.3.12 Which bit pattern identifies the start of an Ethernet frame:

(a) 11001100…1100 (b) 00000000…0000
(c) 11111111…1111 (d) 10101010…1010

B.3.13 The main standards relating to Ethernet networks are:

(a) IEEE 802.2 and IEEE 802.3
(b) IEEE 802.3 and IEEE 802.4
(c) ANSI X3T9.5 and IEEE 802.5
(d) EIA RS-422 and IEEE 802.3

B.3.14 Which layer in the Ethernet standard communicates with the OSI Network layer:

(a) the MAC layer (b) the LLC layer
(c) the Physical layer (d) the Protocol layer

B.3.15 Standard, or Thick-wire, Ethernet is also known as:

(a) 10BASE2 (b) 10BASE5
(c) 10BASE-T (d) 10BASE-F

B.3.16 Twisted-pair Ethernet is also known as:

(a) 10BASE2 (b) 10BASE5
(c) 10BASE-T (d) 10BASE-FL

B.3.17 Fiber optic Ethernet is also known as:

(a) 10BASE2 (b) 10BASE5
(c) 10BASE-T (d) 10BASE-F

B.3.18 Which type of connector does twisted-pair Ethernet use when connecting to a network hub:

(a) N-type (b) BNC
(c) RJ-45 (d) SMA

B.3.19 Which type of connector does Cheapernet, or thin-wire Ethernet, use when connecting to the network backbone:

(a) N-type (b) BNC
(c) RJ-45 (d) SMA

B.3.20 What is the function of a repeater in an Ethernet network:

(a) It increases the bit rate
(b) It isolates network segments
(c) It prevents collisions
(d) It boosts the electrical signal

B.3.21 What devices do vLANs use:

(a) Switches (b) Hubs
(c) Routers (d) Repeaters

B.3.22 What is the main advantage of a switch over a hub:

(a) Simultaneous connections (b) More connections
(c) Use less power (d) Easier to connect to

B.3.23 What does an asymmetric switch use:

(a) Different networking types (b) Different cable types
(c) Different bit rate connections (d) Different connector types

B.3.24 Which of the following statements is always true:

(a) If the destination address is not on the connected segment, the bridge blindly passes it onto other network segments
(b) If the destination address is not on the connected segment, the bridge makes a decision on where to send the Ethernet frame
(c) A bridge always forwards Ethernet frames
(d) A bridge never forwards Ethernet frames

B.3.25 If the bit rate is 100Mbps, what is the time period for each digital pulse:

(a) 1ns (b) 10ns
(c) 100ns (d) 1μs

B.3.26 Which is the broadcast address that is used on an Ethernet network:

(a) 00-00-00-00-00-00 (b) FF-FF-FF-FF-FF-FF
(c) 12-34-56-78-90-10 (d) AA-AA-AA-AA-AA-AA

B.3.27 What is the advantage of store-and-forward switching over cut-through switching:

(a) Improved error checking (b) Faster
(c) Requires less memory (d) Easier to connect to

B.3.28 What is the advantage of cut-through switching over store-and-forward switching:

(a) Improved error checking (b) Faster
(c) Requires less memory (d) Easier to connect to

B.3.29 How long does it take to transmit 1000 bits at a rate of 20Mbps:

(a) 50ns (d) 500ns
(c) 5µs (b) 50µs

B.3.30 How does a bridge know when to forward an Ethernet frame:

(a) It builds up a table with the MAC addresses all the connected nodes on the segment
(d) It guesses whether it should be forwarded
(c) It contacts the destination node
(b) It knows about all the MAC address of every computer in the organization

B.3.31 Which of the following is not an advantage of a bridge:

(a) It segments the network up into smaller units
(d) It isolates data transfer within a segment
(c) It does not forward collisions on the Ethernet segment
(b) It allows for the automatic configuration of the network

B.3.32 What is the main disadvantage of a network hub over bridges:

(a) Hubs do not allow different bit rates, while bridges do
(b) Hubs transmit collisions to all the connected nodes, while bridges do not transmit them
(c) Hubs do not allow different cable types, while bridges do
(d) Hubs do not allow different connector types, while bridges do

Additional:

http://www.soc.napier.ac.uk/~bill/cnds_tutorial0B.3.html

