

**Institute of Business Administration  
MIS & CS Department  
CSE-556 Internetworking  
Fall Semester 2002  
Third Hourly Test  
November 6, 2002**

**Time Allowed: One Hour**

**Total Marks: 100**

**Instructions**

1. Attempt all questions. All questions are Multiple Choice and each question carries 2.5 marks. There is no partial credit. There is no negative marking. Maximum/Total Marks are 100.
2. Time allowed is 1 hour.
3. Do NOT write on the Question Paper. Provide your answers on the answer sheet provided for this purpose.

---

**Provide the letter corresponding to the correct answer.**

1. A distributed application is based on intermittent and simple request response interaction between clients and server. Which transport layer protocol should be used by this distributed application?  
*a. TCP                      b. UDP                      c. ICMP                      d. IP*
2. If the IP address of a host is written as 192.168.1.131/26, what is the subnet mask of this host?  
*a. 255.255.255.0      b. 255.255.0.0      c. 255.255.255.128      d. 255.255.255.192*
3. If the system of IP address classes is in use, what is the class of the IP address 122.135.48.66?  
*a. A                      b. B                      c. C                      d. D*
4. Which version of ICMP is in use with IP Version 4?  
*a. 1                      b. 2                      c. 4                      d. 6*
5. Which one of the following is not a protocol?  
*a. ARP                      b. RARP                      c. Inverse ARP                      d. Proxy ARP*
6. Ethernet Addresses (also known as MAC Addresses) are how many bits long?  
*a. 32                      b. 48                      c. 64                      d. 128*
7. Which of the following fields of the IP header does not normally change as an IP datagram travels over an internetwork?  
*a. TTL                      b. Header Checksum                      c. Fragmentation Offset                      d. Version*

8. What is the network address for the subnet where a host has the IP address 10.10.1.74/27  
a. 10.10.1.0                      b. 10.255.255.255      c. 10.10.1.95                      d. 10.10.1.64
9. What is the Protocol ID for a UDP segment contained within an IP datagram?  
a. 4                                      b. 89                                      c. 6                                      d. 17
10. Which one of the following protocols is connectionless?  
a. TCP                                      b. HDLC                                      c. IP                                      d. PPP
11. OSPF routing protocol utilizes which transport layer to carry its messages?  
a. TCP                                      b. UDP                                      c. Neither                                      d. Both a and b  
depending on the  
length of the message
12. The Root Bridge of the Spanning Tree Algorithm is the bridge with the highest port speed.  
a. True                                      b. False
13. Which one of the following is not an example of a layer 2 address?  
a. DLCI                                      b. VPI/VCI                                      c. IPX Address                                      d. MAC Address
14. Which protocol is used by bridges/switches to eliminate loops?  
a. OSPF                                      b. RIP                                      c. Spanning Tree Protocol                                      d. Proxy ARP
15. Switch where you *must*, route where you *can*.  
a. True                                      b. False
16. Which of the following protocols is connection-oriented?  
a. ARP                                      b. UDP                                      c. ICMP                                      d. TCP
17. How many hosts can a standard Class B network address accommodate?  
a. 65534                                      b. 1022                                      c. 510                                      d. 254
18. What is the maximum possible size of an IP Version 4 datagram?  
a. 1500 bytes                                      b. 1024 bytes                                      c. 8192 bytes                                      d. 65535 bytes
19. Finding hardware address for a protocol address is called:  
a. Name Resolution                                      b. Address Resolution                                      c. Router Redirection                                      d. Source  
Quench

20. An ARP response uses which one of the following transmission mechanisms?  
*a. Broadcast      b. Anycast      c. Unicast      d. Multicast*
21. This is the physical and/or electrical configuration of cabling and connections comprising a network.  
*a. MAC Protocol      b. Frame Format      c. Topology      d. Duplexity*
22. For a noisy environment with many transmission errors per unit time a Store and Forward switch is better than a Cut Through switch.  
*a. True      b. False*
23. If a switch has to perform a speed conversion (100 Mbps to 10 Mbps), as is usually the case when using a High Speed Backbone, then the switch must operate in a Store and Forward mode.  
*a. True      b. False*
24. Hosts having only a private IP address have IP-layer connectivity to the Internet.  
*a. True      b. False*
25. The IP address of a host is 140.128.34.79. The subnet mask is 255.255.255.192. What is the IP broadcast address for the network that this host is attached to?  
*a. 140.128.34.255      b. 140.128.255.255      c. 140.128.34.127      d. 140.128.34.63*
26. The TTL field in IP Version 4 datagram has been renamed in IP Version 6 packet to  
*a. Next Header      b. Traffic Class      c. Hop Limit      d. Flow Label*
27. IP Version 6 addresses are these many bits long.  
*a. 32      b. 64      c. 128      d. 256*
28. The IDENTIFICATION field along with this other field can be used at the destination for uniquely identifying the fragments belonging to the same original IP datagram.  
*a. TTL      b. Destination Address      c. Source Address      d. Fragment Offset*
29. The purpose of this field in IP version 4 header is to control the lifetime of a packet.  
*a. Header Checksum      b. Source Address      c. Version      d. TTL*
30. This technique has been used to control the growth of Internet Backbone Routers' routing tables.  
*a. Subnetting      b. Supernetting      c. Private Addresses      d. VLSM*

31. In this type of a topology a frame circulates until it returns to source, which removes it from network.
- a. *Bus*                      b. *Mesh*                      c. *Ring*                      d. *Star*
32. This type of a cable layout minimizes the amount of cable used to connect stations.
- a. *Star*                      b. *Linear*
33. Repeaters can do media conversion between UTP and optical fiber.
- a. *True*                      b. *False*
34. Source Routing bridges are used to interconnect these types of LANs
- a. *Ethernet to Ethernet*                      b. *Ethernet to Token Ring*                      c. *Token Ring to Token Ring*                      d. *Ethernet to FDDI*
35. The class of the IP address 10.1.1.1 is
- a. *A*                      b. *B*                      c. *C*                      d. *D*
36. Following device can be used to separate collision domains.
- a. *Repeater*                      b. *Bridge*                      c. *Router*                      d. *b & c*
37. Following device can be used to separate broadcast domains.
- a. *Repeater*                      b. *Bridge*                      c. *Router*                      d. *b & c*
38. Under the conditions of a lightly loaded network, the Token Ring MAC protocol would generally result in low delay to access the medium.
- a. *True*                      b. *False*
39. Which field of the IP Version 4 header can be used to determine the Path MTU?
- a. *TTL*                      b. *Fragment Offset*                      c. *DF Flag*                      d. *MF Flag*
40. Which of the following fields of the IP Version 4 header is used by the traceroute utility?
- a. *TTL*                      b. *DF Flag*                      c. *Fragmentation Offset*                      d. *Header Checksum*

### **BONUS QUESTION (10 POINTS)**

Draw the IP Version 6 Packet Format.