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Exam 1

CIS 68C2

Fall 2002

Instructions

- Write your name at the top of every sheet.
- For **True/False** and **Multiple Choice** questions, circle the **single** correct answer (true or false, or one of the appropriate letters a – e).
- If you are unclear about something, raise your hand.
- Any form of cheating will result in an automatic F in the course.

Hints for Success

- Use your knowledge of the fundamentals, and draw conclusions from there.
- Read each problem carefully!
- Try to determine the skills or knowledge a question is attempting to assess.
- Decide if a general answer or specific answer is the best choice.
- There is no penalty for incorrect answers.

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True / False (2 points each)

1. TCP/IP is based on the OSI reference model. (True / False)
2. UDP is an efficient, connection-oriented protocol. (True / False)
3. The IP address 191.168.2.3/16 is a class B address. (True / False)
4. IP addresses are defined to be 4 byte quantities which are byte-oriented. (True / False)
5. Class C IP addresses provide for more networks than Class A IP addresses. (True / False)
6. The number of possible subnets in a subnetted network must always be a power of 2. (True / False)
7. 240.0.0.0 is a valid network mask. (True / False)
8. The NFS daemon nfsd is run on NFS client systems. (True / False)
9. The Core and Subordinate Core Gateways along with GGP are in widespread use. (True / False)
10. Only routers/gateways make routing decisions. (True / False)
11. PAR, checksums, and byte-streams suggest the TCP protocol. (True / False)
12. Remote services connect to random, high-numbered source ports. (True / False)
13. The file /etc/hosts is used to define a host's hostname. (True / False)
14. Non-privileged applications should use ports below 1024. (True / False)
15. TCP/IP services are much like those in PC LAN environments. (True / False)
16. There are only two principle TCP/IP Name Services in use today. (True / False)
17. TCP/IP provides just fewer than 2048 services. (True / False)
18. Telnet, rsh, rlogin, and ftp all transmit clear text passwords, and as such, are security risks. (True / False)
19. NFS requires login names to be the consistent on all systems. (True / False)
20. The Linux autofs automounter facility provides direct, indirect, and executable maps. (True / False)

Multiple Choice (2 points each)

21. TCP/IP is best described as:
 - a. a hardware-dependent protocol
 - b. inefficient
 - c. Internet Protocol over Transmission Control Protocol
 - d. a suite of protocols
22. Each layer in TCP/IP adds its own header information, which is known as:
 - a. encryption
 - b. packetization
 - c. encapsulation
 - d. segmentation
 - e. authentication

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23. RFCs are:
- Remote Function Calls
 - the TCP/IP specifications**
 - the definitions of the ISO OSI networking model
 - draft standards
 - no longer used
24. In the TCP/IP networking model, each layer on the source host:
- communicates with the application or service on the destination host
 - communicates with the same layer on the destination host**
 - communicates with all the layers beneath it
 - all of the above
25. Fragmentation and the datagram are defined by:
- ICMP
 - IP**
 - TCP
 - UDP
 - Ethernet
26. Routing and internet addressing are defined by:
- ICMP
 - IP**
 - TCP
 - UDP
 - Ethernet
27. The IP address below in dotted-decimal notation is:
- 10101100000100000001010100000011
- 172.16.10.3
 - 192.168.10.3
 - 172.16.21.3**
 - 86.8.42.6
 - none of the above
28. The IP address 177.33.45.9/21 implies a network mask of:
- 255.255.255.0
 - 255.255.224.0
 - 255.255.242.0
 - 255.255.248.0**
 - none of the above
29. ICMP is part of which layer?
- network access
 - transport
 - internet**
 - application
 - presentation
30. The IP address 224.255.255.255:
- is a broadcast address
 - is a Class D address**
 - indicates that the last octet, the host part, is 255
 - both (a) and (b)
 - both (b) and (c)

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31. CIDR:
- is Classless Internet Domain Routing
 - introduced and requires a network mask for successful data delivery
 - relaxed the restrictions on network/host division
 - all of the above**
32. The natural mask and a network mask are the same when:
- routing is disabled
 - all routers are in agreement over the mask
 - the network part of the IP address conforms to the IP class definitions**
 - they are defined as such by the network administrator
 - none of the above
33. How many subnets are specified if an organization is assigned one Class A IP address of 11.2.4.6 but has subnetted using a subnet mask of 255.254.0.0?
- 0
 - 32
 - 64
 - 96
 - 128**
34. The IP addresses 10.0.9.255/8, 172.19.9.30/16, and 192.168.254.9/24 are all
- subnetted
 - supernetted
 - private**
 - illegal
35. The forwarding table can be modified via.
- the route command
 - ICMP redirects
 - interface bring-up
 - routing protocols
 - all of the above**
36. ARP:
- maps an IP address to a routing protocol
 - is required before a frame can be transmitted**
 - is implemented in the transport layer
 - should be disabled to increase security
 - none of the above
37. 100002, 100011, and 100017 are all:
- TCP/UDP ports
 - ICMP codes
 - RPC program numbers**
 - services
 - just plain silly
38. The files (A) through (E) listed below contain name/number pairs. Considering the fundamental numeric data contained in each, which choice provides the best top-to-bottom network layer ordering:
- A: /etc/protocols, B: /etc/services, C: /etc/rpc, D: /etc/ethers, E: /etc/hosts
- B, C, A, E, D
 - C, B, A, E, D**
 - E, C, B, A, D
 - A, C, B, D, E
 - D, E, C, B, A

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39. The file that defines NFS filesystems to be mounted during multi-user bring-up is :
- /etc/exports
 - /var/lib/nfs/xtab
 - /etc/fstab**
 - /etc/hosts
 - none of the above
40. A socket is the combination of :
- a protocol and a port number
 - a two way communication mechanism
 - an IP address / port number pairing**
 - both (b) and (c)
 - all of the above
41. RARP, BOOTP, DHCP are:
- protocols that provide configuration services**
 - ICMP messages
 - considered obsolete
 - dynamic allocation protocols
 - all of the above
42. An automounter setup to automount somehost:/home/joeuser would typically require the files:
- /etc/auto.master and /etc/auto.direct
 - /etc/auto.master and /etc/auto.home**
 - /etc/auto.conf and /etc/auto.home
 - /etc/auto.conf, /etc/auto.master, and /etc/auto.home
43. Select the pair of NFS daemons that if run, must be run together:
- mountd and lockd
 - statd and lockd**
 - biod and mountd
 - lockd and quotad
44. The file /var/lib/nfs/xtab:
- is maintained by the system administrator
 - defines the exported directories or shares
 - is a binary file, updated by the exportfs command**
 - all of the above
45. Unless otherwise overridden, the default NFS directory export options are:
- ro, no_root_squash
 - rw, root_squash
 - ro, root_squash**
 - rw, no_root_squash
46. The file /etc/fstab contains a list of:
- filesystems to mount during multi-user boot**
 - exported environment variables
 - share points
 - already mounted filesystems
47. The portmap daemon:
- must be started before ybind, but after ypserv
 - must be started before any program that uses RPC**
 - is independent of NIS and NFS services
 - is rarely used
 - is started by the xinetd daemon

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48. The name service switch file /etc/nsswitch.conf:
- a. is used only when DNS is not used
 - b. is used by all system services
 - c. specifies the order in which some system databases are queried
 - d. specifies the system's name servers
49. The daemons required to be an NIS client are:
- a. nisd and portmap
 - b. ypbind and portmap
 - c. ypserv and ypbind
 - d. yppasswdd, ypbind, and ypserv
50. A default route:
- a. is required for packet delivery
 - b. is used when no other specific route matches
 - c. is specified by BOOTP
 - d. all of the above