Register Number.....

M.C.A. DEGREE EXAMINATIONS: APRIL/ MAY 2009

Fourth Semester

P07CA401 UNIX & NETWORK PROGRAMMING

Time: Three Hours **Maximum Marks: 100**

Answer ALL the Questions:-

PART A (20 x 1= 20 Marks)

1. The permissions 746 can be represented as
   a) rwxrwx—x
   b) rw—w-r-x
   c) rwxr—rw-
   d) rwxr-xr-x

2. Which file gets executed when we use the command passwd
   a) /etc/passwd
   b) /etc/pwd
   c) /bin/passwd
   d) /passwd

3. The command head f1 would display
   a) First line of the file f1
   b) Nothing
   c) First 10 lines of the file f1
   d) The whole file f1

4. The directory routine struct dirent *readdir(DIR *dp); returns
   a) pointer if OK, NULL at end of directory or error
   b) Returns: 0 if OK, 1 on error
   c) pointer if OK, NULL on error
   d) NULL

5. A _____ is an instance of a _____.
   a) process; program
   b) program; process
   c) process; service
   d) structure; process

6. Four processes from one program are created: one parent, two children, and one grandchild. How many process ids are there?
   a) 1
   b) 2
   c) 3
   d) 4

7. Which of the following is not true as regards the kill command?
   a) Super user can kill daemon process
   b) For sure kill the signal no is 9
   c) There is no surety that the shell process will get killed by the command kill <PID of shell process>
   d) Using kill command you can kill other user's processes too

8. The command that UNIX offers to a user to find out whether he can send messages to a particular terminal are
   a) finger and who
   b) finger –mseg and who –T
   c) finger –i and who –t
   d) finger –i and who –T

9. How many file descriptors are returned through the filedes argument in pipe function?
   a) 2
   b) 3
   c) 1
   d) 4

10. The pclose function is used to
   a) Close the standard I/O stream
   b) wait for the command to terminate
   c) return the termination status of the shell
   d) a, b and c

11. We have to fetch the messages from a queue by msgrcv based on
   a) first-in, first-out order
   b) last-in, first-out order
   c) last- in first-out order
   d) their type field

12. A common form of semaphore is called a binary semaphore. It controls
   a) a single resource, and its value is initialized to 1
   b) a single resource, and its value is initialized to 0
   c) multiple resources, and its value is initialized to 1
   d) multiple resources, and its value is initialized to 0

13. The _____ field in the socket structure is a structure of type sockaddress.
   a) family
   b) local socket address
   c) remote socket address
   d) b and c

14. To convert a 16-bit integer to network byte order, use the _____ function.
   a) htons
   b) ntohs
   c) htonl
   d) ntohl

_____ system call adds the local socket address to an already created socket
a) listen
b) connect
c) bind
d) socket

16. The _____ system call converts a socket into an active socket.
a) convert
b) listen
c) socket
d) bind

17. A connectionless iterative concurrent server uses _____ ports
a) ephemeral
b) well-known
c) active
d) a and b

18. A _____ server serves multiple clients simultaneously
a) connection-oriented iterative
b) connection-oriented concurrent
c) connection-less concurrent
d) b and c

19. The _____ command displays the route from your computer to a specified host
a) arp
b) ping
c) tracert
d) ipconfig

20. The _____ command is uses the _____ protocol to check reach ability of a host from your host.
a) ping; ICMP
b) tracert; ICMP
c) ping; IGMP
d) tracert; IGMP

PART B (5 x 16=80 Marks)

21. a) i) Explain the architecture of UNIX and types of files supported by it. (8)

ii) Explain about symbolic links and "chmod" function in UNIX. (8)

(OR)

21. b) i) Explain the UNIX system's password file and its buffering mechanism. (8)

ii) Explain Group file maintenance and login accounting in UNIX. (8)

22. a) i) Explain the eight ways of terminating a process in UNIX. (6)

ii) Explain the memory layout of a C program. (10)

(OR)

22. b) i) List the various conditions that could generate a signal? What are the possible actions that could be done in association with a signal?. (10)

ii) Explain about "mutexes". (6)

23. a) i) How do you multiplex, multiple writers to the same pipe? (8)

ii) Explain about the message queue functions "msgrcv" and "msgctl" (8)

(OR)

23. b) i) Explain about Record locking. (8)

ii) Explain about the shmget( ) and semop( ) functions. (8)

24. a) i) Explain various types of sockets used for client –server communication. (6)

ii) Explain the following functions. (10)
1) bind 2) connect 3) listen 4) accept

(OR)

24. b) i) Give the syntax and Explain the use of "setsockopt" function. (7)

ii) Explain the following functions (9)
1) getaddrinfo 2) gethostbyname 3)gethostbyaddr

25. a) Develop a TCP concurrent file server. Also write a TCP client to test the concurrency.. (16)

(OR)

25. b) Develop a client application to check the reach ability of the host. Use ICMP messages. (16)

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