Y 3030

M.C.A. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2006.

Third Semester

CA 234 — UNIX AND NETWORK PROGRAMMING

(Regulation 2002)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What does a return value of 0 from printf mean?

2. Can the size of a directory be 0? If yes why?

3. In what ways waitpid is different from wait function?

4. Give the syntax for "kill" command and explain the fields.

5. What is the difference between pipes and FIFO?

6. What are the disadvantages of system V IPC mechanism?

7. What is the use of 'listen' function?

8. What is the need for byte conversion routines?

9. What are the steps involved in creating a TCP server?

10. Name one ICMP error message used by trace route tool.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain with necessary data structures how a file can be shared among two processes. (10)

    (ii) Explain the use of dup and dup 2 functions. (6)

Or

(b) (i) Explain the various buffering schemes. Explain the ANSI C buffering characteristics for standard input, output and error.

(9 + 2)

(ii) What are the functions required to change these default buffering characteristics? (5)

12. (a) (i) What are the fields present in the environment list? How are they passed to a program? (8)

(ii) Draw the memory layout of a C program with·an example. (8)

Or

(b) (i) What are signals? When are they raised? (3 + 4)

(ii) List the various ways in which a signal can be handled. (4)

(iii) List any five signals and explain their default action. (5)

13. (a) (i) Explain the similarities among the system V IPC mechanisms. (9)

(ii) Explain the operation of pipe with necessary system calls. (7)

Or

(b) Write a note on system V IPC mechanisms. (16)

14. (a) Write a note on the following functions :

(i) connect

(ii) setsockopt ( )

(iii) select

(iv) ntohs. (4 × 4 = 16)

Or

(b) Write a note on I/O multiplexing. (16)

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15. (a) Write a client/server application to find the round trip time. Round trip time is the time interval between sending a packet and receiving the corresponding acknowledgement. (16)

Or

(b) Write an iterative echo client/server application. The server should print the message and the client details. (16)

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