KUMARAGURU college of technology
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Register Number:……..…

MCA DEGREE EXAMINATIONS: MAY 2015

(Regulation 2009)

Fourth Semester.

MASTER OF COMPUTER APPLICATIONS

MCA515:Unix and Network Programming

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

Answer all the Questions:-

PART A (10 x 2 = 10 Marks)

1. What is a file descriptor? List the three reserved file descriptors and state their uses.
2. List all the fields of a UNIX password file.
3. Differentiate between fork and exec system calls.
4. What are the two signals that can never be ignored?
5. Which interprocess communication method used in case of two related processes? Give its signature.
6. List the various interprocess communication methods available in the UNIX operating system?
7. Write down any two socket options and their uses.
8. List any four types of resource records and their purpose which are used in a domain name conversion service?
9. What are the various essential system calls used in designing of a simple TCP client?
10. What are the functions used to convert an IPv4 address between dotted-decimal strings to its corresponding 32-bit network byte ordered binary value?

PART B (5 x 16 = 80 Marks)

11. a) (i) Explain in detail about all the file related system calls available in the UNIX environment. Give an implementation in C to perform write and read contents on a file. (12)

    (ii) What are the various types of files available in the UNIX? (4)

(OR)

b) (i) Write short notes on login accounting and System identification (8)

(ii) What is supplementary group id? What are the system calls used to access the information from a group file? (8)

12. a) (i) Explain the functionality of setjmp and longjmp functions. (8)

(ii) Explain in detail the functionality of the various versions of exec functions. (8)

(OR)

b) (i) How is network logins performed in the UNIX operating system (4)

(ii) Explain in detail about the working principles of the kill, raise, alarm and pause functions. (12)

13. a) (i) How to create a pipe? What are the limitations of pipes? (4)

(ii) Explain with an example C program on how a Message Queue is used for interprocess communication. (12)

(OR)

b) (i) What are the system calls used for the creation and operation of semaphore? (4)

(ii) How a Message Queue is used for interprocess communication? Explain it with an example C program. (12)

14. a) (i) Draw a neat labeled state diagram explaining in detail the various states of a TCP socket. (8)

(ii) List any 4 generic socket options and explain their functionality. (8)

(OR)

b) (i) Write a Implementation procedure for UDP Socket? (10)

(ii) Write about the two name conversion functions available in the UNIX environment. (6)

15. a) (i) Explain the steps involved in developing a TCP based socket application with the help of a neat labeled block diagram. Implement in C, a TCP based currency conversion server and access it with a TCP based client. (12)

(ii) What are the various debugging techniques available in the UNIX environment? Explain. (4)

(OR)

b) (i) Draw a neat labeled block diagram to explain the steps involved in the implementation of a UDP socket based client server system. (8)

(ii) Implement a ftp client server application in C. (8)

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