CBCS SCHEME

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18CS56

Fifth Semester B.E. Degree Examination, Dec.2023/Jan.2024
UNIX Programming

Time: 3 hrs. Max. Marks: 100

Note: ***Answer any FIVE full questions, choosing ONE full question from each module.***

Module-1

1 a. Explain with a neat block diagram, architecture of UNIX operating system. **(08 Marks)**

b. What is a parent child relationship? With the help of neat diagram, explain UNIX file system. **(06 Marks)**

c. Explain the commands to add, modify and delete a user. **(06 Marks)**

OR

2 a. List and explain the silent features of UNIX operating system. **(08 Marks)**

b. What are internal and external commands in UNIX? Explain with any two examples in each type command used to identify whether command is internal or external command. **(06 Marks)**

c. In brief explain the following commands with example :

i) car ii) mv iii) wc iv) od. **(06 Marks)**

Module-2

3 a. Using both relative and absolute methods of assigning permissions. Files current permissions are rw - - w – r - - - . Write chmod expressions required to change them for the following :

i) r - - r - - - - x
ii) rwxrwx - - x
iii) r - xr - xr - x
iv) rwxrwxr - - . **(08 Marks)**

b. Explain with example set and shift commands in UNIX to manipulate positional parameters. **(06 Marks)**

c. With syntax and programming example explain while and for loops. **(06 Marks)**

OR

4 a. Which command is used for listening of file attributes? Explain the significance of each field. **(08 Marks)**

b. Write syntax of grep command and explain any five options of grep command. **(06 Marks)**

c. In detail discuss the three standard file supported by UNIX. **(06 Marks)**

Module-3

5 a. Explain with a neat diagram memory layout of a C program and briefly discuss the different functions used for memory allocation. **(10 Marks)**

b. Explain the following general APIs along with syntax :

i) open ii) create iii) read iv) write v) close. **(10 Marks)**

OR

6 a. With a neat block diagram, explain how a C program is started and how it terminates. **(10 Marks)**

b. Explain getrlimit and setrlinit function with prototype. **(06 Marks)**

c. Define race condition. Write a 'C' program to demonstrate the race condition. **(04 Marks)**

Module-4

7 a. What are pipes? What are its limitations? Write a program to send data from present to child over a pipe. **(10 Marks)**

b. Briefly explain the semaphore. Explain following APIs with prototype :

i) semget( ) ii) semctl iii) semop. **(10 Marks)**

OR

8 a. What is a FIFO? Writ uses of FIFO with a neat diagram, explain client server communication using FIFO. **(08 Marks)**

b. Explain the following APIs with prototype :

i) Setreuid( ) and setregid( )

ii) System( ). **(08 Marks)**

c. Briefly explain job control. **(04 Marks)**

Module-5

9 a. With a neat diagram, explain the BSD syslog facility daemon process. **(10 Marks)**

b. Explain the following APIs with prototype :

i) Siprocmask

ii) Sigaction. **(10 Marks)**

OR

10 a. What are daemon process List the coding rules. **(10 Marks)**

b. Explain the following APIs with prototype

i) Sigsetjmp and siglongjmp

ii) Kill( ). **(10 Marks)**

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