18CS56
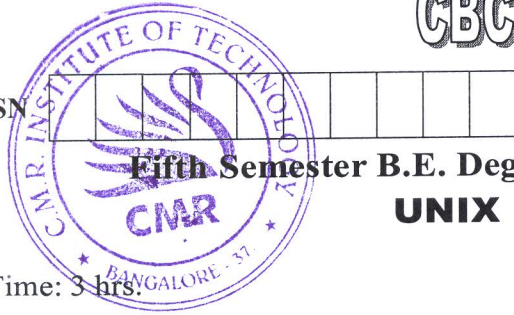
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Fifth Semester B.E. Degree Examination, June/July 2023
UNIX Programming

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 neat diagram, architecture of UNIX operating system. **(10 Marks)**
   b. List and explain the salient features of UNIX operating system. **(10 Marks)**

OR

2 a. Explain basic file types in UNIX. What is relative and absolute pathname? **(10 Marks)**
   b. Explain the following commands :
   i) printf ii) passwd iii) date iv) who **(10 Marks)**

Module-2

3 a. Which command is med for listing of file attributes? Explain the significance of each field. **(10 Marks)**
   b. With the help of an example, explain grep command with all the options. **(10 Marks)**

OR

4 a. Explain 3 standard redirection files with respect to UNIX OS. **(10 Marks)**
   b. Define shell script. Write menu driven shell script which displays:
   i) Current users of sys.   ii) List of files
   iii) Today's date   iv) Process status
   v) Contents of file. **(10 Marks)**

Module-3

5 a. Discuss how a program is started and terminated in various ways along with suitable diagram. **(10 Marks)**
   b. Explain UNIX kernel support for process considering parent child relationship, show the related data structures. **(10 Marks)**

OR

6 a. Write a detailed description on wait and waitpid( ) with suitable programming example. **(10 Marks)**
   b. Explain fork( ) and vfork( ) functions with programming example. **(10 Marks)**

Module-4

7 a. Explain implementation of system( ) function with its prototype. **(10 Marks)**
   b. What are pipes? What are its limitations? Write a program to send data from parent to child over a pipe. **(10 Marks)**

OR

8 a. What is FIFO? With neat diagram, explain client-server communication using FIFO. **(10 Marks)**
   b. Explain setuid and setgid functions with example and explain various ways to change user-ids. **(10 Marks)**

Module-5

9 a. What is daemon process? Explain coding rules with program. **(10 Marks)**

   b. What are signals? Mention different source of signals write a program to setup signal handlers for SIGINT and SIGALRM. **(10 Marks)**

OR

10 a. Discuss how error logging is done by daemon process with suitable diagram. **(10 Marks)**

   b. Explain prototypes of following APIs:
       (i)   signal
       (ii) kill
       (iii) alarm
       (iv) sigaction **(10 Marks)**

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