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18CS56

## Fifth Semester B.E. Degree Examination, Feb./Mar. 2022 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 the architecture of UNIX Operating System. (10 Marks)  
b. Explain the following commands : (10 Marks)  
i) printf ii) passwd iii) date iv) who.

OR

- 2 a. Explain features of UNIX. (10 Marks)  
b. Explain basic file types in UNIX. What is relative and absolute pathname? (10 Marks)

### Module-2

- 3 a. Interpret the significance of `ls -l` command redirection. (10 Marks)  
b. Explain 3 standard redirection files with respect to UNIX OS. (10 Marks)

OR

- 4 a. Explain changing file permissions in absolute and relative manner. (10 Marks)  
b. Define Shell Script. Write menu driven shell script which displays : (10 Marks)  
i) Currents users of system ii) List of files iii) Today's date  
iv) Process status v) Contents of a file.

### Module-3

- 5 a. What is the advantage of locking files? Explain mandatory and advisory locks. Why advisory lock is considered safe? What are the drawbacks of advisory lock? Explain. (12 Marks)  
b. Explain `exec` functions with program. (08 Marks)

OR

- 6 a. Discuss how a C program is started and terminated in various ways along with suitable diagram. (10 Marks)  
b. Write a C/C++ program using `setjmp` and `longjmp` to show their effect on various variables. (10 Marks)

### Module-4

- 7 a. What is Stream Pipe? Explain it with program. How Stream pipe is better than pipe? (10 Marks)  
b. Explain the implementation of system with its prototype. (10 Marks)

OR

- 8 a. Define Message queue. Discuss how it is useful in IPC. (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)

**Module-5**

- 9 a. Discuss how error logging is done by daemon process with suitable diagram. (10 Marks)  
b. Discuss the working of sigprocmask API. Explain all parameters of API with program. (10 Marks)

**OR**

- 10 a. What is Daemon process? Explain coding rules and error logging. (10 Marks)  
b. Explain the prototypes of following APIs : (10 Marks)  
i) Signal      ii) Kill      iii) alarm      iv) sigaction.

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