



# CBCS SCHEME

18CS56

## Fifth Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026 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. 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:  
(i) Current users of system  
(ii) List of files  
(iii) Today's date  
(iv) Process status  
(v) Contents of a 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. 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. 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 : (10 Marks)
- (i) signal
  - (ii) kill
  - (iii) alarm
  - (iv) sigaction

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