CBCS SCHEME

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BCS515C



# Fifth Semester B.E./B.Tech. Degree Examination, June/July 2025
## Unix System Programming

Time: 3 hrs. Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.*
*2. M : Marks , L: Bloom's level , C: Course outcomes.*

| | | Module – 1 | M | L | C |
|---|---|---|---|---|---|
| Q.1 | a. | Explain Unix Architecture with neat diagram. | 08 | L2 | CO1 |
| | b. | List and explain the salient features of Unix Operating System | 06 | L1 | CO1 |
| | c. | Explain the following commands with suitable example.<br>i) echo ii) ls iii) who iv) date v) cal vi) printf | 06 | L2 | CO1 |
| | | **OR** | | | |
| Q.2 | a. | Define file. Explain three categories of unix files system. | 04 | L1 | CO1 |
| | b. | Write a short note on :<br>i) Parent – child relationship<br>ii) Absolute and relative pathname | 06 | L2 | CO1 |
| | c. | Explain the following file related command with appropriate syntax, options and example<br>i) cat ii) Mr iii)rm iv) cp v) wc | 10 | L2 | CO1 |
| | | **Module – 2** | | | |
| Q.3 | a. | Briefly explain the listing of file attribute with ls – l command | 10 | L2 | CO2 |
| | b. | Explain briefly the chmod with respect to relative permission and absolute permission with example. | 10 | L2 | CO2 |
| | | **OR** | | | |
| Q.4 | a. | With help of a example, explain grep command and the options supported for searching a pattern. | 10 | L3 | CO2 |
| | b. | Explain shell interpretive life cycle | 02 | L2 | CO2 |
| | c. | Explain if, while, for and case control statement in shell scripts with suitable program. | 08 | L2 | CO2 |
| | | **Module – 3 2** | | | |
| Q.5 | a. | Explain the general file control functions o2pen ( ), Read ( ), create ( c ) write ( ) and close ( ) with syntax, examples. | 10 | L2 | CO3 |
| | b. | With neat diagram, explain memory layout of C program | 10 | L2 | CO3 |
| | | **OR** | | | |
| Q.6 | a. | Explain setjmp and longjmp, getrlimit and setrlimit with examples | 10 | L2 | CO3 |
| | b. | Explain chdir, fchdir and getcwd functions with an example C program | 10 | L2 | CO3 |
| | | **Module – 4** | | | |
| Q.7 | a. | Describe how the process is created using fork ( ) and v fork ( ) with suitable C program example. | 10 | L3 | CO4 |
| | b. | What is race condition? Explain in detail with example how to overcome race condition. | 10 | L2 | CO4 |

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| | | **OR** | | | |
| **Q.8** | **a.** | Define pipes. Write a program to send data from parent to child using pipe API and also list its limitations. | **10** | **L2** | **CO4** |
| | **b.** | What is FIFO ? With a neat diagram explain client server communication using FIFO. | **10** | **L1** | **CO4** |
| | | **Module – 5** | | | |
| **Q.9** | **a.** | Define signal. List the actions taken by process when the signal is raised. Explain signal API's Signal ( ), Sigset( ) Sigaction ( ) | **10** | **L2** | **CO5** |
| | **b.** | What is error logging? With a neat block diagram discuss the error login facility in BSD. | **10** | **L2** | **CO5** |
| | | **OR** | | | |
| **Q.10** | **a.** | What are Daemon process ? Explain daemon characteristics and coding Rules. | **10** | **L2** | **CO5** |
| | **b.** | Explain the Sigsetjmp and siglagjmp function with example. | **10** | **L2** | **CO5** |

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