VI SEMESTER

MANAGEMENT AND ENTREPRENEURSHIP
(Common to All Branches)

Subject Code: 10AL61	I.A. Marks : 25
Hours/Week : 04	Exam Hours: 03
Total Hours : 52	Exam Marks: 100

UNIX SYSTEM PROGRAMMING

Subject Code: 10CS62	I.A. Marks : 25
Hours/Week : 04	Exam Hours: 03
Total Hours : 52	Exam Marks: 100

PART - A

UNIT – 1 **6 Hours**

Introduction: UNIX and ANSI Standards: The ANSI C Standard, The ANSI/ISO C++ Standards, Difference between ANSI C and C++, The POSIX Standards, The POSIX.1 FIPS Standard, The X/Open Standards.
UNIX and POSIX APIs: The POSIX APIs, The UNIX and POSIX Development Environment, API Common Characteristics.

UNIT – 2 **6 Hours**

UNIX Files: File Types, The UNIX and POSIX File System, The UNIX and POSIX File Attributes, Inodes in UNIX System V, Application Program Interface to Files, UNIX Kernel Support for Files, Relationship of C Stream Pointers and File Descriptors, Directory Files, Hard and Symbolic Links.

UNIT – 3 **7 Hours**

UNIX File APIs: General File APIs, File and Record Locking, Directory File APIs, Device File APIs, FIFO File APIs, Symbolic Link File APIs, General File Class, regfile Class for Regular Files, dirfile Class for Directory Files, FIFO File Class, Device File Class, Symbolic Link File Class, File Listing Program.

UNIT – 4 **7 Hours**

UNIX Processes: The Environment of a UNIX Process: Introduction, main function, Process Termination, Command-Line Arguments, Environment List, Memory Layout of a C Program, Shared Libraries, Memory Allocation,

Environment Variables, setjmp and longjmp Functions, getrlimit, setrlimit Functions, UNIX Kernel Support for Processes.

PART - B

UNIT – 5 **7 Hours**

Process Control : Introduction, Process Identifiers, fork, vfork, exit, wait, waitpid, wait3, wait4 Functions, Race Conditions, exec Functions, Changing User IDs and Group IDs, Interpreter Files, system Function, Process Accounting, User Identification, Process Times, I/O Redirection.

Process Relationships: Introduction, Terminal Logins, Network Logins, Process Groups, Sessions, Controlling Terminal, tcgetpgrp and tcsetpgrp Functions, Job Control, Shell Execution of Programs, Orphaned Process Groups.

UNIT – 6 **7 Hours**

Signals and Daemon Processes: Signals: The UNIX Kernel Support for Signals, signal, Signal Mask, sigaction, The SIGCHLD Signal and the waitpid Function, The sigsetjmp and siglongjmp Functions, Kill, Alarm, Interval Timers, POSIX.lb Timers.

Daemon Processes: Introduction, Daemon Characteristics, Coding Rules, Error Logging, Client-Server Model.

UNIT – 7 **6 Hours**

Interprocess Communication – 1: Overview of IPC Methods, Pipes, popen, pclose Functions, Coprocesses, FIFOs, System V IPC, Message Queues, Semaphores.

UNIT – 8 **6 Hours**

Interprocess Communication – 2: Shared Memory, Client-Server Properties, Stream Pipes, Passing File Descriptors, An Open Server-Version 1, Client-Server Connection Functions.

Text Books:

1. Terrence Chan: UNIX System Programming Using C++, Prentice Hall India, 1999.
   (Chapters 1, 5, 6, 7, 8, 9, 10)
2. W. Richard Stevens: Advanced Programming in the UNIX Environment, 2nd Edition, Pearson Education, 2005.
   (Chapters 7, 8, 9, 13, 14, 15)

Reference Books:

1. Marc J. Rochkind: Advanced UNIX Programming, 2nd Edition, Pearson Education, 2005.
2. Maurice J Bach: The Design of the UNIX Operating System, Pearson Education, 1987.

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3. Uresh Vahalia: UNIX Internals: The New Frontiers, Pearson Education, 2001.

COMPILER DESIGN

Subject Code: 10CS63	**I.A. Marks : 25**
Hours/Week : 04	**Exam Hours: 03**
Total Hours : 52	**Exam Marks: 100**

PART – A

UNIT – 1 **8 Hours**

Introduction, Lexical analysis: Language processors; The structure of a Compiler; The evolution pf programming languages; The science of building a Compiler; Applications of compiler technology; Programming language basics.

Lexical analysis: The Role of Lexical Analyzer; Input Buffering; Specifications of Tokens; Recognition of Tokens.

UNIT – 2 **6 Hours**

Syntax Analysis – 1: Introduction; Context-free Grammars; Writing a Grammar. Top-down Parsing; Bottom-up Parsing.

UNIT – 3 **6 Hours**

Syntax Analysis – 2: Top-down Parsing; Bottom-up Parsing.

UNIT – 4 **6 Hours**

Syntax Analysis – 3: Introduction to LR Parsing: Simple LR; More powerful LR parsers (excluding Efficient construction and compaction of parsing tables) ; Using ambiguous grammars; Parser Generators.

PART – B

UNIT – 5 **7 Hours**

Syntax-Directed Translation: Syntax-directed definitions; Evaluation orders for SDDs; Applications of syntax-directed translation; Syntax-directed translation schemes.

UNIT – 6 **6 Hours**

Intermediate Code Generation: Variants of syntax trees; Three-address code; Translation of expressions; Control flow; Back patching; Switch-statements; Procedure calls.

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