SYSTEMS SOFTWARE

Written by Administrator
Sunday, 08 November 2009 06:57 -

Subject   Code

:

06CS52   ⬚⬚

IA   Marks

:

25

No. of Lecture Hrs./ Week

:

04

Exam Hours

:

03

Total No. of Lecture Hrs.

:

52

Exam Marks

:

100

PART - A

UNIT - 1

MACHINE ARCHITECTURE:□□□□□□□□□Introduction, System Software and Machine Architecture, Simplified Instructional Computer (SIC) - SIC Machine Architecture, SIC/XE Machine Architecture, SIC Programming Examples.

6 Hours

UNIT - 2

ASSEMBLERS - 1: Basic Assembler Function - A Simple SIC Assembler, Assembler Algorithm and Data Structures, Machine Dependent Assembler Features - Instruction Formats & Addressing Modes, Program Relocation.

6 Hours

UNIT - 3

ASSEMBLERS - 2: Machine Independent Assembler Features – Literals, Symbol-Definition Statements, Expression, Program Blocks, Control Sections and Programming Linking, Assembler Design Operations - One-Pass Assembler, Multi-Pass Assembler, Implementation Examples - MASM Assembler.

6 Hours

UNIT - 4

LOADERS AND LINKERS: Basic Loader Functions - Design of an Absolute Loader, A Simple Bootstrap Loader, Machine-Dependent Loader Features – Relocation, Program Linking, Algorithm and Data Structures for a Linking Loader; Machine-Independent Loader Features - Automatic Library Search, Loader Options, Loader Design Options - Linkage Editor, Dynamic Linkage, Bootstrap Loaders, Implementation Examples - MS-DOS Linker.

8 Hours

PART - B

UNIT - 5

EDITORS AND DEBUGGING SYSTEMS: Text Editors - Overview of Editing Process, User Interface, Editor Structure, Interactive Debugging Systems - Debugging Functions and Capabilities, Relationship With Other Parts of The System, User-Interface Criteria.

6 Hours

UNIT - 6

MACRO PROCESSOR: Basic Macro Processor Functions - Macro Definitions and Expansion, Macro Processor Algorithm and Data Structures, Machine-Independent Macro Processor Features - Concatenation of Macro Parameters, Generation of Unique Labels, Conditional Macro Expansion, Keyword Macro Parameters, Macro Processor Design Options - Recursive Macro Expansion, General-Purpose Macro Processors, Macro Processing Within Language Translators, Implementation Examples - MASM Macro Processor, ANSI C Macro Processor.

8 Hours

UNIT - 7

LEX AND YACC – 1: Lex and Yacc - The Simplest Lex Program, Recognizing Words With LEX, Symbol Tables, Grammars, Parser-Lexer Communication, The Parts of Speech Lexer, A YACC Parser, The Rules Section, Running LEX and YACC, LEX and Hand- Written Lexers, Using LEX - Regular Expression, Examples of Regular Expressions, A Word Counting Program, Parsing a Command Line.

6 Hours

UNIT - 8

LEX AND YACC - 2: Using YACC - Grammars, Recursive Rules, Shift/Reduce Parsing, What YACC Cannot Parse, A YACC Parser - The Definition Section, The Rules Section, Symbol Values and Actions, The LEXER, Compiling and Running a Simple Parser, Arithmetic Expressions and Ambiguity, Variables and Typed Tokens.

6 Hours

TEXT BOOKS:

1.   **System Software** - Leland. L. Beck, 3rd Edition, Addison-Wesley, 1997.

2.   **Lex and Yacc -** John. R. Levine, Mason and Doug Brown, O'Reilly, SPD, 1998.

REFERENCE BOOK:

1.   **System Programming and Operating Systems** – D.M.Dhamdhere, 2nd Edition, Tata McGraw - Hill, 1999.

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