

BSc (IT)

DSC-8 SYSTEM SOFTWARES

(L:T:P::4:0:2) 6 Credits

Unit 1: Overview

Introduction, System software and machine architecture, Simplified Instructional Computers (SIC) and its architecture, Instruction Formats of IBM-360. Language processing system, illustrative examples.

Unit 2: Assembler

Assembler ,Introduction, General design procedure, design of Assembler, statement of problem, data Structure, Format of Databases, Algorithm for pass 1 and pass 2, look for modularity. Explanation along with flowcharts for both pass 1 and pass 2 (detail flowchart).

Unit 3: Macro Language and macro processor and Loaders

Introduction, Macro instructions, Features of macro facility-macro instruction arguments, Conditional macro Expansion, Macro calls within macro, Macro instruction defining macro implementation: statement of problem, Specification of databases and specification of database format, Algorithm and flowchart for processing macro definitions and macro expansion Introduction.

Unit 4:

Loader schemes-compile and go loader scheme, general loader, Absolute loader, Relocating loader, Direct linking loader, overlays, Dynamic loading. Introduction to compiler, different phases in compilation, Lexical Phase, Syntax Phase, Intermediate code generation, code optimization and target code generation.

Text Books:

1. System programming – John. J. Donovan.
2. System Software – Leland L. Beck, Third edition, Addison Wesley 1997.