

**Module 1****Chapter 1 : Introduction to System Software 1-1 to 1-12**

Syllabus : Introduction to System Software : Concept of System Software, Goals of system softwares, system program and system programming; Introduction to various system programs such as Assembler, Macro processor, Loader, Linker, Compiler, Interpreter, Device Drivers, Operating system, Editors, Debuggers.

1.1	Concept of System Software	1-1
1.1.1	System Software	1-1
1.1.2	Programming Software.....	1-1
1.1.3	Application Software.....	1-1
1.1.4	Difference between Application Program and System Program	1-2
1.1.5	Goals of System Software	1-3
1.1.6	Difference between System Program and System Programming	1-3
1.2	Introduction to Language Processors	1-3
1.2.1	What are Language Processors ?	1-4
1.2.2	Spectrum of Language Processors	1-4
1.3	Language Processing Activities.....	1-4
1.3.1	Program Generation	1-4
1.3.2	Program Execution.....	1-4
1.4	Introduction to Various System Programs	1-5
1.4.1	Assemblers	1-5
1.4.1(A)	Different Types of Assemblers	1-5
1.4.2	Loaders	1-5
1.4.2(A)	Functions of a Loader.....	1-6
1.4.2(B)	Types of Loader	1-6
1.4.3	Linkers	1-6
1.4.3(A)	Various Functions Performed by a Linker.....	1-6
1.4.4	Macro Processors	1-7
1.4.4(A)	Types of Macros.....	1-7
1.4.5	Compilers.....	1-7
1.4.5(A)	Applications of Compiler.....	1-8
1.4.5(B)	Phases of Compiler.....	1-8

1.4.6	Interpreters.....	1-8
1.4.6(A)	Difference between Interpreter and Compiler	1-9
1.4.7	Operating Systems.....	1-9
1.4.7(A)	Features of an Operating System.....	1-9
1.4.8	Device Drivers	1-9
1.4.8(A)	Purpose of Device Drivers.....	1-10
1.4.8(B)	Virtual Device Drivers	1-10
1.4.9	Debug Monitor.....	1-10
1.4.10	Editors.....	1-10
1.4.10(A)	Types of Text Editors	1-10
1.4.10(B)	Features of Text Editors	1-10
1.4.11	Debuggers.....	1-11
1.4.11(A)	Features of Debuggers.....	1-11
1.4.11(B)	Reverse Debugging.....	1-11
1.4.11(C)	Various Debuggers.....	1-11
1.4.11(D)	Comparison of various Debuggers	1-11
1.5	Binding.....	1-12

Module 2**Chapter 2 : Assemblers 2-1 to 2-25**

Syllabus : Elements of Assembly Language programming, Assembly scheme, pass structure of assembler. Assembler Design : Two pass assembler design and single pass Assembler, Design for Hypothetical / X86 family processor, data structures used.

2.1	Introduction	2-1
2.1.1	Advantages of Assembly Language	2-1
2.1.2	Disadvantages of Assembly Language.....	2-1
2.2	Elements of an Assembly Language Programming.....	2-2
2.2.1	Basic Feature of an Assembler	2-2
2.2.2	Assembly Language Program Contains Three Kinds of Statements	2-2
2.2.3	An Assembly Language Program	2-2
2.3	Basic Assembler Functions	2-4
2.3.1	Essential Assembler Functions	2-4
2.3.1(A)	Assembler Directives.....	2-5