

(REVISED COURSE)

(3 Hours)

[Total Marks : 100

- N.B. : (1) Question number 1 is **compulsory**.
(2) Attempt any **four** questions out of remaining **six** questions.
(3) Assumptions made should be **clearly** stated.
(4) **Figures** to the **right** indicate **full** marks.
(5) Assume **suitable data** wherever **required** but **justify** the **same**.
1. (a) Explain with the help of flowchart and data structures, working of one pass macro processor. 10
(b) Explain the design of two pass assembler with databases used. 10
2. (a) Explain the design of direct linking loader. 10
(b) Write short notes on :— 10
(i) SPARC Assembler
(ii) Static and Dynamic Binding.
3. (a) Discuss the advantages and disadvantages of incorporating the macro processor in to assembler pass 1. 10
(b) Explain various phases of compiler with suitable example. 10
4. (a) Explain recursive descent parser with suitable example. 10
(b) (i) Consider the following grammar— 10
$$S \rightarrow A$$
$$A \rightarrow Ad \mid Ae \mid aB \mid aC$$
$$B \rightarrow bBC \mid f$$
$$C \rightarrow g$$

Eliminate the left recursion from above grammar.
(ii) Explain different assembler directives.

5. (a) Explain different types of text editors. 10
(b) Write sequences of steps involved in dynamic debugging of program. 10

6. (a) Explain run time storage organization in detail. 10
(b) Construct predictive parsing table for the following grammar— 10
$$S \rightarrow AaAb \mid BbBa$$
$$A \rightarrow \epsilon$$
$$B \rightarrow \epsilon$$

7. (a) Explain design of Absolute Loader. 10
(b) Explain with the help of memory, data formats, registers, instruction formats, addressing modes of traditional CISC machines. 10