

T.E. (Com) (Sem VI) (Rev.) 11/2/06
Systems programming

[REVISED COURSE]

CON/5135-06.

YM-7087

(3 Hours)

[Total Marks : 100

N.B. : (1) Question No.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.

1. Answer the following questions in short : 20
- (a) State the reasons for the assembler to be multipass program.
 - (b) What is binding ? Explain static and dynamic binding.
 - (c) What are various error recovery techniques used by compiler ?
 - (d) Define the finite automata. What is their role in compiler theory ?
 - (e) What is the need of linkage editor in systems programming ?
2. Give the analysis and design of two pass assembler with respect to flowchart, data structures and algorithms. 20
3. (a) Illustrate the various phases of compiler with respect to following statement : 10
Position = initial + Rate * 60
- (b) Explain with the help of memory, registers, data formats, instruction formats, addressing modes of traditional RISC machines. 10
4. (a) Explain the design of Direct linking loader. 10
- (b) What are advantages of using macro in place of subroutine and when will a macro be used explain ? 10
5. (a) Describe the various forms of intermediate code used by compilers. 10
- (b) Discuss the loop optimization techniques with the help of suitable examples. 10
6. (a) For the following Grammar construct the predictive parsing table and explain that step by step : 10
- Grammar G :
- $E \rightarrow TE'$
 - $E' \rightarrow +TE'/E$
 - $T \rightarrow FT'$
 - $T' \rightarrow *FT'/E$
 - $F \rightarrow (E)/id$
- (b) Explain operator precedence parser with suitable example. 10
7. (a) Explain syntax directed translation. Give Syntax directed definition to translate infix Expressions to Postfix Expressions. 10
- (b) Explain LL(1) parser with the help of Example. 10