



**B.Tech. Degree VII Semester (Supplementary) Examination in
Computer Science and Engineering
March 2003**

**CS 702 SYSTEMS PROGRAMMING AND
COMPILER DESIGN
(1998 Admissions)**

Time: 3 Hours

Maximum Marks: 100

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|-------|-----|---|------|
| I. | (a) | Explain two pass assembler. | (15) |
| | (b) | Differentiate between macro and subroutine. | (5) |
| OR | | | |
| II. | (a) | What are the functions of a loader? Explain absolute loader. | (12) |
| | (b) | What are conditional codes? How should an assembler process them? | (8) |
| OR | | | |
| III. | (a) | What is an editor? Explain different types of editors. | (12) |
| | (b) | Write an algorithm for file creation in UNIX. | (8) |
| OR | | | |
| IV. | (a) | What are the components of interactive programming environment? | (10) |
| | (b) | Write a program to read the content of a file. | (10) |
| OR | | | |
| V. | (a) | With a block diagram, explain the various phases of a compiler. | (14) |
| | (b) | Describe the role of lexical analyzer in the design of compilers. | (6) |
| OR | | | |
| VI. | (a) | Briefly explain LEX. | (8) |
| | (b) | Explain the data structures used for symbol table organization. | (12) |
| OR | | | |
| VII. | (a) | Briefly explain the basic passing techniques. | (6) |
| | (b) | Explain the syntax directed translation of assignment statements with mixed type. | (14) |
| OR | | | |
| VIII. | (a) | Outline the important schemes for syntax directed translation. | (10) |
| | (b) | Explain the syntax directed translation scheme for procedure call. | (10) |
| OR | | | |
| IX. | (a) | Explain the following: | |
| | | (i) Dead code elimination | |
| | | (ii) Invariant code motion | (10) |
| | (b) | Explain "Peephole optimization". | (10) |
| OR | | | |
| X. | (a) | Discuss the different errors that can be detected by a compiler. | (10) |
| | (b) | Explain the storage allocation strategies in block structured language. | (10) |