

E 259

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2003.

Third Semester

Computer Science and Engineering

CS 233 --- SYSTEM SOFTWARE

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A --- (10 × 2 = 20 marks)

1. Define indirect addressing mode.
2. Following is a memory configuration :

Address	Value	Register R
1	5	5
5	7	
6	5	
7	7	

What is the result of the following statement?

Add 6 (immediate) to R (indirect).

3. What does an assembler perform when it encounters LTROG assembler directive?
4. Write down the pass numbers (PASS 1/PASS 2) of the following activities that occur in a two pass assembler :
 - (a) Object code generation
 - (b) Literals added to literal table
 - (c) Listing printed
 - (d) Address resolution of local symbols.
5. Define Linking.
6. What is the purpose of the relocation bit in object code of relocation loaders?

7. What is meant by concatenation of macro parameter?
8. What is meant by macro time variable?
9. Discuss the various parsing techniques.
10. State how an interpreter differs from a compiler.

PART B — (5 × 16 = 80 marks)

11. (i) Explain in detail the architecture of a RISC machine with an example. (10)
- (ii) Compare RISC Vs CISC machine. (6)
12. (a) (i) What are the functions performed in pass 1 and pass 2 of a two pass assembler? (8)
- (ii) List the tables and data structures used in a two pass assembler. Explain briefly. (8)

Or

- (b) With a suitable assembly language program explain how a TWO PASS assembler translates this program into machine code. (16)
13. (a) (i) Explain the functions of a Loader. (8)
- (ii) What is BOOTSTRAP loader? Explain its characteristic with examples. (8)

Or

- (b) (i) Explain dynamic linking in detail. (8)
- (ii) Compare linking loader and linkage editor. (8)
14. (a) (i) Define macro definition and macro expansion. (6)
- (ii) Write an algorithm for a simple one pass macro processor. (10)

Or

- (b) (i) Explain recursive macro expansions in detail. (8)
- (ii) With an example explain conditional macro expansion. (8)

15. (a) (i) What are the functions of a compiler? (6)
(ii) Explain in detail the Lexical Analysis phase of a compiler. (10)

Or

- (b) (i) Explain Machine-dependent code optimization technique. (8)
(ii) Briefly explain important functions and capabilities of an editor. (8)
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