ANNA UNIVERSITY COIMBATORE

B.E. / B.TECH. DEGREE EXAMINATIONS : MAY/ JUNE 2010

REGULATIONS : 2007

FOURTH SEMESTER : CSE

070230044 - SYSTEM SOFTWARE

TIME : 3 Hours **Max.Marks : 100**

PART – A

(20 x 2 = 40 MARKS)

ANSWER ALL QUESTIONS

1. Mention the registers used in simplified instructional computer.
2. What are the addressing modes used in SIC architecture.
3. Suppose that ALPHA is an array of 100 words. Write a sequence of instructions for SIC to set all 100 elements of the array to 0.
4. Write the sequence of steps to be done for translating source program into its object code.
5. How could an assembler that allows external references avoid the need for an EXTDEF statement?
6. How could literals be implemented in a one-pass assembler?
7. Write the basic features provided in MASM assembler.
8. Write the function of Bootstrap loader.
9. How program relocation is performed using modification record scheme.
10. What is meant by Dynamic Linking?
11. What are the loader options that are available in the system?
12. What is meant by expanding of macros?
13. How to perform concatenation of macro parameters.
14. How could default values be specified for positional parameters?
15. Write the functions of locator devices.
16. What is the purpose of using editing filters?
17. Write the function of Tracing and Traceback utility.

18. Mention the various criteria considered for user-interface design.
19. How should a programmer decide whether to use a macro or a subroutine to accomplish a given logical function?
20. What would be the advantages and disadvantages of writing a loader using a high-level programming language?

PART – B

(5 x 12 = 60 MARKS)

ANSWER ANY FIVE QUESTIONS

21. a) Write a subroutine for SIC that will read a record into a buffer. The record may be any length from 1 to 100 bytes. The end of the record is marked with a 'null' character. The subroutine should place the length of the record read into a variable named LENGTH (6)

    b) Discuss SIC/XE machine architecture along with its instruction set. (6)

22. a) Discuss the machine dependent assembler features. (6)

    b) Explain the implementation of MASM assembler. (6)

23. a) Illustrate the process of designing an absolute loader. (6)

    b) Explain the algorithm and data structures used for linking loader. (6)

24. a) Discuss the implementation of ANSI C macro language. (6)

    b) Explain the conditional macro expansion with example. (6)

25. a) Explain the features of Editor structure in a text editor. (6)

b) Discuss the debugging functions and capabilities in interactive debugging systems. (6)

26. a) Discuss the implementation of MASM macro processor. (6)

b) Write an algorithm for a two-pass macro processor in which all macro definitions are processed in the first pass, and all macro invocations are expanded in the second pass. (6)

27. a) Discuss the machine independent loader features. (6)

b) Write note on: Linkage Editors. (6)

28. a) Discuss the working of multi-pass assembler with example. (6)

b) Illustrate the process of handling programs that consist of multiple control sections. (6)

*****THE END*****