Register Number: ……

B.E/ B.TECH DEGREE EXAMINATIONS: NOV/DEC 2010

Fourth Semester

U07CS402: SYSTEM SOFTWARE

(Common to Computer Science and Engineering & Information Technology)

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions:-

PART A (10 x 1 = 10 Marks)

1. In SIC architecture negative numbers are represented by

   (a) 1's complement (b) 2's complements (c) BCD addition (d) BCD subtraction

2. In Base relative addressing the value of b is

   (a) 0 (b) 1 (c) 2 (d) -1

3. What is the usual starting address of absolute loader?

   (a) 2000 (b) 1000 (c) 1500 (d) 2500

4. A relative expression should contain

   (a) Label (b) variable (c) constant (d) value

5. The Modification record contains the details about

   (a) Loading (b) Relocation (c) Linking (d) Expansion

6. If an argument is to be *omitted*, the macro invocation must contain a _____

   (a) NULL argument (b) character argument (c) Integer argument (d) Floating point

7. _____ can be used to track the flow of execution logic and data modifications

   (a) Break Point (b) Tracing (c) Trace Back (d) Debugging

8. Accumulator is mainly used for _____ operations

   (a) Logical (b) Arithmetic (c) relational (c) I/O (d) bitwise

9. The following is not a machine independent feature of assembler

   (a) Literals (b) Symbol defining statements (c) Expressions (d) Addressing

10. The register L is called as _____

    (a) Linkage register (b) Index register (c) special register (d) extended register

PART B (10 x 2 = 20 Marks)

11. List the two major differences between system software and application software

12. Give the instruction format of the SIC architecture

13. Define Assembler

14. What is meant by forward reference?

15. List the three processes to be performed by any loader

16. Give the various data structures used in the direct linking loader algorithm

17. What is meant by expanding a macro?

18. Give any two types of editors

19. Differentiate tracing and trace back

20. Write the syntax to define a macro

PART C (5 x 14 = 70 Marks)

21. a) Explain the machine architecture of SIC in detail.

(OR)

b) Explain the machine architecture of SIC /XE in detail.

22. a) List and explain machine independent features of a assembler.

(OR)

b) Write the algorithm for implementing Pass I of a two pass assembler .List and discuss the roles of data structures used.

23. a) Define and explain the mechanism of dynamic linking.

(OR)

b) Write the algorithm for pass 1 of a linking loader.

24. a) Write detailed notes on MASM macro processor.

(OR)

b) (i) List and discuss the role of data structures used in macro processor algorithm. (7)

(ii) Explain macro within macro. (7)

25. a) Give the overview of editing process and explain the functions related to it.

(OR)

b) Explain the structure and working of interactive debugging system.

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