

Register Number: .....

**B.TECH DEGREE EXAMINATIONS: APRIL/MAY 2012**

Fourth Semester

**INFORMATION TECHNOLOGY**

CSE106: System Software

**Time: Three Hours**

**Maximum Marks: 100**

**Answer ALL the Questions:-**

**PART A (10 x 1 = 10 Marks)**

1. Which of the following is not the RISC machine?  
a) Pentium Pro Architecture                      b) Ultra SPARC Architecture  
c) PowerPC Architecture                      d) Cray T3E Architecture
2. How many bytes are there in SIC Computer memory?  
a)  $2^{14}$  bytes      b)  $2^{15}$  bytes      c)  $2^{16}$  bytes      d)  $2^{17}$  bytes
3. The Value of the \_\_\_\_\_ is protected by the assembler by the fact that the assembly language programmer does not know the name and address of it  
a) Constant      b) Literal                      c) Variable                      d) String
4. \_\_\_\_\_ is an operand, whose location cannot be specified in the assembly program  
a) Constant      b) Literal      c) Variable                      d) Strings
5. When computer is first turned on or restarted, a special type of absolute loader is executed called a  
a) compiler and go loader    b) boot loader    c) boot strap loader    d) relocation loader
6. \_\_\_\_\_ performs linking operations before the program is loaded for execution  
a) Linking loader      b) Dynamic linking    c) Dynamic loading    d) Linkage editors
7. An Instruction in a programming language that is replaced by a sequence of instruction prior to assembly or compiling is known as  
a) Procedure name      b) Macro      c) Label      d) Literal
8. A \_\_\_\_\_ is a unit of specification for program generation through expansion  
a) Macro                      b) LEX                      c) YACC                      d) Parser
9. A compiler for a high level language that runs on one machine and produce code for a different machine is called as  
a) Optimizing Compiler    b) One pass compiler    c) Cross compiler    d) Multi pass compiler

10. The translator output a program form called  
a) Binary program    b) Object program    c) Executable program    d) Source program

**PART B (10 x 2 = 20 Marks)**

11. How is the target address calculated in Base Relative and Program Counter relative addressing modes?  
12. Give the instruction formats of SIC/XE machine.  
13. What does an assembler perform when it encounter LTROG assembler directive?  
14. How assemblers handle forward reference instruction?  
15. Mention the usage of the directory by a loader.  
16. What is linking loader?  
17. What is meant by line-by-line macro Processor?  
18. What is meant by macro time variable?  
19. How an interpreter differs from a compiler?  
20. List out the different forms of editor.

**PART C (5 x 14 = 70 Marks)**

21. a) (i) Explain in detail the architecture of any one RISC machine (10)  
(ii) Compare RISC vs. CISC Machine. (4)

**(OR)**

- b) Highlight the architecture of SIC/XE machine.

22. a) (i) What are the functions performed in pass 1 and pass 2 of a two pass assembler? (7)  
(ii) List the tables and data structures used in a two pass assembler. Explain. (7)

**(OR)**

- b) (i) Write short notes on MASM assembler. (5)  
(ii) Explain the operation of multi pass assembler with an example. (9)

23. a) (i) Explain dynamic linking in detail. (7)  
(ii) Compare linking loader and linkage editor. (7)

**(OR)**

- b) (i) What is an absolute loader? Bring out its features. (7)

(ii) What is meant by relocation? How a relocatable program for a standard SIC machine works? (7)

24. a) Explain the algorithm and data structures used in the implementation of macro processor.

**(OR)**

b) (i) With an example explain conditional macro expansion. (10)

(ii) Define concatenation of macro parameters. (4)

25. a) Discuss the important functions and capabilities of an editor.

**(OR)**

b) Explain about the various phases of a compiler with an example.

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