

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

Third Semester

**COMPUTER SCIENCE AND ENGINEERING**

CSE106: System Software

**Time: Three Hours**

**Maximum Marks: 100**

**Answer ALL Questions:-**

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

1. In SIC machine what is the use of X bit?
  - a) Indirect addressing
  - b) Direct addressing
  - c) Indexed addressing
  - d) Relative addressing
2. The number of bytes reserved for RESW 1 is
  - a) 5
  - b) 2
  - c) 4
  - d) 4
3. Second pass in 2 pass assembler is needed for
  - a) Resolving byte reservation
  - b) resolving forward reference address
  - c) resolve relative addressing
  - d) resolve absolute addressing
4. Which addressing is not affected by program relocation
  - a) Direct Addressing
  - b) Indirect addressing
  - c) Index addressing
  - d) Relative addressing
5. Loading is to
  - a) load program into secondary memory
  - b) load program into cache memory
  - c) load program into primary memory
  - d) load variables into registers
6. Bootstrap loader is used to load
  - a) program into memory
  - b) first program to be executed by the computer
  - c) application program into memory
  - d) debugging program into memory
7. Basic macro processor functions are
  - a) Macro definition and expansion
  - b) Macro processor algorithm and data structures
  - c) a & b
  - d) Address calculation
8. Preprocessor is used for
  - a) Definitions and invocations of macros
  - b) Definitions of macros
  - c) Invocation of macros
  - d) Expansion of macros

9. Debugging is to find

- a) run time error    b) compile time error    c) syntax error    d) semantic error

10. Yacc

- a) Yet another compiler compiler    b) Yet another code compiler  
c) Yet another cross compiler    d) Yet another c compiler

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

11. List out the registers and their functions available in SIC machine.  
12. What is the use of n, i and p bits in instruction format of SIC / XE machine.  
13. Give any four assembler directives and its purpose.  
14. Give the header record format of an object code.  
15. What is relocation?  
16. Define bootstrap loader.  
17. What is the use of NAMTAB, DEFTAB and ARG TAB tables in Macro processing algorithm?  
18. Define conditional Macro Expansion with an example  
19. What is lexical analysis?  
20. List out the functions of debugging.

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

21. a) i) Distinguish between system software and application software with an example (4)  
      ii) Explain about the architecture of SIC (10)  
      (OR)  
      b) Explain the architecture of SIC/XE machine  
22. a) (i) Write an algorithm for pass1 of a 2 pass assembler and explain (10)  
      (ii) Write a note on program relocation with an example. (4)  
      (OR)  
      b) Write about any four machine independent assembler features.  
23. a) Explain with an example about absolute loader. (OR)  
      b) Write about machine independent loader feature.  
24. a) Write the functions of a macro processor (OR)  
      b) Write short notes on  
          (i) Concatenation of macro parameters (5)  
          (ii) Conditional macro expansion (5)  
          (iii) Keyword Macro parameters (4)  
25. a) Explain the structure of a compiler (OR)  
      b) (i) Write a note on editor structure. (10)  
          (ii) Explain about the interactive debugging systems. (4)

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