

SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

Course & Branch: B.E/B.Tech – CSE/IT

Title of the paper: System Programming

Semester: V

Max. Marks: 80

Sub.Code: 11507(2002/2004/2005)/12507 (2002/2003/2004/2005)

Time: 3 Hours

Date: 05-05-2008

Session: AN

PART – A

(10 x 2 = 20)

Answer All the Questions

1. What is the instruction format of an ALP?
2. Name any four pseudo instructions for an assembler.
3. How is a nested Macro call implemented?
4. What is an absolute loader?
5. What is the need for the conversion of an NFA to DFA?
6. When is a grammar said to be CFG?
7. What is a Quadruple?
8. Write the postfix notation for if $a < b$ then $c = d+2$ else $c = d + 4$.
9. What is Flow Graph?
10. What is a Quadruple?

PART – B

(5 x 12 = 60)

Answer All the Questions

11. Design a two pass assembler
(or)
12. (a) Write an ALP to multiply and divide a number by 2 without using add, mul, sub, div statements
(b) With examples, Explain the various logical and control instructions.
13. Write short notes on
 - i. Relocation and Linking
 - ii. Design of a Macro processor(or)
14. Design a Linker with an example
15. Explain the role of a Lexical Analyzer and how regular expressions are formed for lexemes and others.
(or)
16. Write an algorithm for minimizing the DFA, Explain it for the string $(a/b)^* ab$
17. Explain with examples the various ways of representing Intermediate Code for a Compiler
(or)
18. (a) What are the principles sources of Optimization. Give examples
(b) How is global data flow Analysis performed
19. Write short notes on
 - a. Reducible flow graph with example
 - b. Induction Variable Elimination
 - c. Dominators(or)
20. Explain the construction of DAG with an example. Also list out the applications of DAG.