Total Pages –

46165

BT-6/M-24
COMPILER DESIGN
Paper–PC-CS-302A

Time : Three Hours]　　　　[Maximum Marks : 75

Note : Attempt *five* questions in all, selecting *one* question from each unit.

UNIT–I

1.　What are different phases of Compiler and also write the role of these phases in compiler?　　　　(15)

2.　What do you mean by compiler construction tools and explain Parser generator, lexical Analyzer and Scanner generator in detail?　　　　(15)

UNIT–II

3.　(a)　What do you mean by ambiguity in Context free grammar and write the steps to remove the ambiguity in CFG by taking an appropriate example?

　　(b)　Explain TOP down parsing by taking an appropriate example.　　　　(15)

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4. What do you mean by LALR parser? Design a LALR (1) Parsing table from the following Grammar?

$$S \rightarrow AA$$

$$A \rightarrow aA$$

$$A \rightarrow b. \hspace{4cm} (15)$$

UNIT–III

5. Explain the following allocation in detail :

   (a) Static Allocation,

   (b) Heap Allocation,

   (c) Stack Allocation,

   by taking an appropriate example. (15)

6. What is role of Directed Acyclic Graph (DAG) in Compiler Design? Also write an algorithm for construction of Directed Acyclic Graph in Compiler Design with an example :

$$T0 = a + b \hspace{1cm} - \text{Expression 1}$$

$$T1 = T0 + c \hspace{0.7cm} - \text{Expression 2}$$

$$d = T0 + T1 \hspace{0.5cm} - \text{Expression 3.} \hspace{1cm} (15)$$

UNIT–IV

7. What do you mean by Optimization and explain machine independent and machine dependent optimization in detail by taking an example? (15)

8. (a) Explain panic mode in detail with the help of an example.

(b) Explain the optimization of basic block, loop and peephole optimization with the help of an example.

(15)

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