Roll No. ....

Total Pages : 3

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BT-6/M-23

COMPILER DESIGN

Paper : PC-CS-AIDS-302A

Time : Three Hours]

[Maximum Marks : 75

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

UNIT–I

1. What are different phases of compiler. Write applications and draw block diagram for these phases. (15)

2. (a) What is difference between finite and non-finite automata. (3)

   (b) Write the process of converting a regular expression into an - NFA. Change for (a/b)*a and 00(01+10)*11. (12)

UNIT–II

3. Construct CLR parsing table for the given context free grammar and explain step by step

   S-->AA

   A-->aA|b. (15)

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4. What is LR parser and explain its algorithm. Draw LR parsing table for the following grammar :

$E \rightarrow E + T|T$

$T \rightarrow TF|F$

$F \rightarrow F*|a|b.$ (15)

UNIT–III

5. (a) What do you mean by sementic error and attribute grammar. (5)

(b) Explain the following allocation in detailed :
(i) Static allocation.
(ii) Stack allocation.
(iii) Heap allocation. (10)

6. Explain Three-Address Code Intermediate code generator and Directed Acyclic Graph. Draw DAG for :

$t_0 = a + b$

$t_1 = t_0 + c$

$d = t_0 + t_1.$ (15)

UNIT–IV

7. What is optimization in compiler design. Explain Peephole optimization, Loop optimization and machine dependent optimization with the help of example. (15)

8. (a) What is error recovery method? Explain Panic mode and statement mode of error recovery methods with the help of example. (10)

(b) Explain heap storage management with the help of example. (5)

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