

[Total No. of Questions - 9] [Total No. of Printed Pages - 3]

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CS-603 (Compiler Design)

B.Tech. 6th (CBCS)

Time : 3 Hours

Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt Five questions in all, selecting one-question from each section A, B, C and D. Question no. 9 is compulsory.

SECTION - A

Attempt any one from the following questions.

1. (a) Describe compiler writing tool in details. (5)
(b) Discuss the phase of compiler briefly. (5)
2. (a) What is the difference between compiler and interpreter? (5)
(b) Describe lexical phase errors with the help of example. (5)

SECTION - B

Attempt any one from the following questions.

3. (a) Design LL(1) parsing table for the following grammar (5)
 $S \rightarrow aAc d \mid BCe$
 $A \rightarrow b/\epsilon$
 $B \rightarrow Cf \mid d$
 $C \rightarrow fe$

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- (b) What do you mean by left factoring a grammar? explain with the help of an example. (5)
4. Explain the working methodology of canonical LR parser with the help of example. (10)

SECTION - C

Attempt any one from the following questions.

5. (a) Difference between S-attribute SDT and L attribute SDT with suitable example. (5)
(b) Explain the difference between syntax directed definition and translation schemes. (5)
6. Why we need 3 address code? Discuss the quadruples and triples form of three address code. Write the 3-address code for the following code fragment (10)
if $a < b$ then
while $c > d$ do
 $x = x + y$
else
 do $p = p + q$
 while $e <= f$

SECTION - D

Attempt any one from the following questions. (10×1=10)

7. (a) Write an algorithm to partition, a given sequence of three-address codes into basic blocks. (5)
(b) Discuss the object program in details with the help of example. (5)

8. (a) Write an algorithm for code generation. (5)
(b) Discuss the peephole optimization with the help of example. (5)

SECTION - E (Compulsory)

9. Answer the following questions briefly.

- (i) What is the difference between stack storage and heap storage?
(ii) What is the role of lexical analyzer?
(iii) Define basic blocks.
(iv) Type conversion.
(v) Ordered list.
(vi) Context free grammar (CFG)
(vii) Discuss static and dynamic checking.
(viii) Local optimization.
(ix) Semantic errors.
(x) Hash Table.

(10×2=20)

11:20

11:20 AM
while (i < n) {
 // ...
}