

BTCSCS302

B.Tech.(CSBS-TCS)

V Semester Examination, June-July 2024

Compiler Design

Choice Based Credit System (CBCS)

Time: 3 Hrs.**Maximum Marks : 60****Minimum Pass Marks: 24**

- Note:* (1) All questions carry equal marks, out of which part 'A' and 'B' carry 3 marks and part 'C' carries 6 marks.
 (2) From each question, part 'A' and 'B' are compulsory and part 'C' has internal choice.
 (3) Draw neat diagram, wherever necessary.
 (4) Assume suitable data wherever necessary.

- Q.1.(A)** What is Finite automata? Write its uses. **03**
(B) What is a single pass and multipass compiler? **03**
(C) Discuss the phases of a compiler with their task and sketch. **06**

OR

Explain relating regular expressions and finite automata with examples.

- Q.2.(A)** Give the Classification of Context-free grammars. **03**
(B) Give the classification of various parsing techniques. **03**
(C) Construct LL(1) parsing table for the following Grammar: **06**
 $E \rightarrow E+T/T, T \rightarrow T^*F/F, F \rightarrow (E)/id$

OR

Check given grammar is LL(1) but not SLR(1).

 $S \rightarrow AaAb \mid BbBa, A \rightarrow \epsilon, B \rightarrow \epsilon$

- Q.3.(A)** What is a symbol table? Also give symbol attributes in it. **03**
(B) Give the flow of attributes in a syntax tree. **03**
(C) Define in Run-time environment: Procedure activation, parameter passing. **06**

OR

What are syntax directed definitions? Define it for assignment expression with suitable example

- Q.4.(A)** Define following: DAG, Three Address Code. **03**
(B) What are the different intermediate forms? **03**

Contd.....

(C) Write any two methods of code-optimization in detail.

06

OR

What is Intermediate Code? Discuss various representations of three address code for $a = (a + b * c) * (b * c) + (b + c)$.

Q.5.(A) Write the methods of Register allocation.

03

(B) How does compilation of non-imperative programming languages work?

03

(C) Explain loop optimization in detail.

06

OR

Define data abstraction and target code generation.

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