

6/6

TE. Comp SEM V (CGWS)

10/5/18

S.P.C.C.

Q.P. Code : 581500

(3 Hours)

[Total Marks : 80

- N.B. :** (1) Question No. 1 is compulsory.
(2) Attempt any **three** from the remaining questions.
(3) Assume suitable **data** if necessary.
(4) **Figures** to the right indicate **full marks**.

1. (a) What is the role of an automata in compiler design. 5
(b) Eliminate Left recursion in the following grammar (Remove Direct and Indirect recursion) 5
 $S \rightarrow Aa \mid b$
 $A \rightarrow Ac \mid Sd \mid \epsilon$
(c) What is an activation record? Draw diagram of General Activation record and explain the purpose of different fields of an activation record. 5
(d) What is the difference between Compiler and Interpreter. 5
2. (a) Explain with an example Quadruples, Triples, Indirect triples. 10
(b) What is the difference between Dynamic Loading and Dynamic Linking explain with an example 10
3. (a) Write a note on JAVA compiler environment. 5
(b) Write a brief note on Design of an Editor. 5
(c) Explain synthesized and Inherited attributes used in Syntax Directed Definition. 5
(d) Find FIRST and FOLLOW Set for given grammar below 5
 $E \rightarrow TE'$ $E' \rightarrow + TE' \mid \epsilon$
 $T \rightarrow FT'$ $T' \rightarrow * FT' \mid \epsilon$
 $F \rightarrow (E)$ $F \rightarrow id$
4. (a) Explain different Code Optimization technics along with an example. 10
(b) For the following grammar construct LR(0) parser table 10
 $S \rightarrow aCDe$
 $C \rightarrow Cbc$
 $C \rightarrow b$
 $D \rightarrow d$
And Parse the string $abbcbcd$. Show contents of stack and i/p buffer and action taken after each step.

5. (a) Draw and explain DAG and represent the following example with it. **10**
(a / b) + (a / b) * (c * d)
- (b) What are the different phases of Compiler ? Illustrate compilers internal representation of source program for following statement after each phase **10**
Amount = P + P * N * R / 100
6. (a) With reference to Assembler explain following tables with suitable example. **10**
(i) POT (ii) MOT
(iii) ST (iv) LT
- (b) What are the different issues in design of Code Generator ? Explain with an example. **10**
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