

Code No: R31051

R10

Set No. 1

III B.Tech I Semester Supplementary Examinations, May - 2016

COMPILER DESIGN
(Computer Science and Engineering)

Time: 3 hours

Max. Marks: 75

Answer any FIVE Questions
All Questions carry equal marks

- 1 a) Differentiate between compiler and interpreter. [7]
b) What is compiler? Explain in brief about phases of a Compiler. [8]
- 2 a) What is LEX? Explain, in detail, different sections of LEX program. [8]
b) Write regular expressions for the following patterns. [7]
i) The set of words having a, e, i, o, u appearing in that order, although not necessarily consecutively. ii) Comments in C.
- 3 a) Compute First and Follow for the grammar $E \rightarrow E+T/T$, $T \rightarrow T^*F/F$, $F \rightarrow (E)/id$. [8]
b) Eliminate Left Recursion for the grammar $E \rightarrow E+T/T$, $T \rightarrow T^*F/F$, $F \rightarrow (E)/id$. [7]
- 4 a) Construct SLR Parsing table for the grammar $S \rightarrow CC$, $C \rightarrow cC/d$. [8]
b) Explain in brief about Operator Precedence parsing. [7]
- 5 a) Construct CLR parsing table for the grammar $E \rightarrow E+T/T$, $T \rightarrow T^*F/F$, $F \rightarrow (E)/id$. [8]
b) Define LR parser? Explain in brief about types of LR Parsers. [7]
- 6 a) Differentiate between L-attributed and S-attributed grammars. [8]
b) Explain in brief about Heap Management. [7]
- 7 a) Write short notes on the following: [8]
a) Live variable Analysis b) Copy propagation c) Reaching definitions.
b) Translate the assignment $A := (E/F) * (C-D)$ in to the following: [7]
i) quadruples ii) triples iii) indirect triples
- 8 a) Generate code for the following basic block: $t1=b+c$ $t2=d*e$. [8]
b) Explain in brief about Peephole optimization. [7]

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