BE INSEM AUG 2015

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B.E/Insem.- 74

B.E. (Computer Engg.)

PRINCIPLES OF MODERN COMPILER DESIGN

(2012 Pattern) (Semester - I)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates:

1) *Neat diagrams must be drawn wherever necessary.*
2) *Figures to the right indicate full marks.*
3) *Assume suitable data, if necessary.*

Q1) a) Explain need of symbol table with compiler. List different data structures for symbol table. [4]

b) What is garbage collection? [2]

c) What is LEX? Give format of LEX specification file. [4]

OR

Q2) a) Compare single pass and multi-pass design for compiler. [4]

b) What are lexeme, pattern and token in lexical analysis? [3]

c) Explain static Vs dynamic storage allocation. [3]

Q3) a) What are problems/ issues associated with top-down parser. [2]

b) What is type checking? [2]

c) Generate LR(1) parsing table for following grammar: [6]

$S \rightarrow BB$

$B \rightarrow cB$

$B \rightarrow d$

OR

Q4) a) Explain in brief: Recursive Descent parser [2]

b) Differentiate between syntax and semantic analysis by giving example. [2]

c) Check if following grammar is LL (1) [6]

$S \rightarrow iCtSS' \mid a$

$S' \rightarrow eS \mid \in$

$C \rightarrow b$

P.T.O.

Q5) a) Explain advantages of intermediate code. [2]

b) Compare quadruple, triple and indirect triple. [4]

c) Generate intermediate code for following statement: [4]

a= b+c

(Specify syntax directed translation scheme)

OR

Q6) a) Explain need for intermediate code. [2]

b) Define: L-attributed grammar [2]

c) Generate intermediate code for following Boolean expression: [6]
p < q or a > b

(Specify syntax directed translation scheme)

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