Oct.-16/BE/Insem.- 172

B.E. (Computer Engineering)

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) What are different storage allocation strategies? Explain. [4]

b) Define lexeme, token. [2]

c) What are symbol tables? Explain in brief the different ways of organizing the symbol table. [4]

OR

Q2) a) Explain briefly about input buffering in reading source program for finding tokens. [4]

b) Write regular expression for floating point number. [2]

c) Explain Garbage collection techniques. [4]

Q3) a) Compare top down and bottom up parsers. [2]

b) Explain type checking and type conversion. [2]

c) Check if following grammar is LL (1) or not [6]

X -> YZ

Y -> m|n|ε

Z -> m

OR

Q4) a) What is an ambiguous grammar? Give an example. [2]

b) Explain Closure function for constructing SLR parsing table. [2]

c) Construct a canonical parsing table for the grammar given below. [6]

Grammar G={N,T,S,P},

Nonterminals N ={S,A,B} and terminals T = {a,b}, S is the start symbol and P is a set if productions.

S->AB

A->aA

A->a

B->Bb

B-> b

Q5) a) Explain the following terms. [4]

i) Synthesized attributes.

ii) Inherited attributes.

b) Explain advantages of intermediate code. [2]

c) Generate three address code and quadruples for the following. [4]

a=b*–c+b*–c

OR

Q6) a) Explain L-attributed Definition. [2]

b) Explain syntax tree and DAG. [2]

c) Write syntax directed translation scheme for Boolean expression. [6]

Generate intermediate code for following.

a<b and c<d

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