

Total No. of Questions : 6]

SEAT No. :

P114

[Total No. of Pages : 2

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

P.T.O.

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 of productions.

$S \rightarrow AB$

$A \rightarrow aA$

$A \rightarrow a$

$B \rightarrow Bb$

$B \rightarrow b$

- 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 $c < d$

