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SEAT No. :

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B.E./Insem. - 582

B.E. (Computer Engineering) (Semester - I)

PRINCIPLES OF MODERN COMPILER DESIGN

(2012 Pattern)

1.1 Hour]

[Max. Marks : 30

Directions to the candidates:

- Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6.
- Neat diagrams must be drawn wherever necessary.
- Figures to the right indicate full marks.
- Assume suitable data, if necessary.

- What is Lex? Give format of LEX specification file. [4]
- Explain the data structures used in symbol table. [4]
- Write regular expression for identifier declaration. [2]

OR

- Explain front end and back end of the compiler with suitable example. [4]
- Explain & discuss the various garbage collection techniques. [4]
- Define token with example. [2]

- Construct predictive parser for following grammar [6]

$S \rightarrow AaAb \mid BbBa$

$A \rightarrow \epsilon$

$B \rightarrow \epsilon$ Parse the string "ab".

- What is an ambiguous grammar? Give an example. [4]

OR

P.T.O.

- Construct SLR parsing table for following: [6]

$S \rightarrow xAy \mid xBy \mid xAz$

$A \rightarrow aS \mid q$

$B \rightarrow q$

- List and explain various error recovery techniques. [4]

- Define Syntax Directed Definitions. [2]

- Generate abstract syntax tree for the expression: [2]

$-(a + b) * c/d.$

- Give SDD for arithmetic expression with example. [6]

OR

- Explain bottom-up evaluation of synthesized attribute with example. [6]

- Generate Three Address Code, quadruple, Triple, Indirect Triple for following: [4]

$A = -B * (C + D)/E.$