

Roll No. ....

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BT-7/D-13

8701

COMPILER DESIGN

CSE-401

Time : Three Hours]

[Maximum Marks : 100

Note : Attempt any Five questions. All questions carry equal marks.

1. (a) Eliminate the left recursion for the following grammar : 7

S → a | ^ |(T)

T → T, S|S

(b) Show that the following grammar is LR(1) :

S → Aa|bAc|Bc|bBa

A → d

B → d 7

(c) Make a comparative analysis between SLR parser, LALR parser and CLR parser. 6

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P.T.O.

2. (a) Consider the grammar : 10

E → E + T|T

T → TF/F

F → F\*|a|b

Construct the SLR parsing Table for this grammar. Also parse the input string a\*b + a.

(b) Consider the following grammar :

E → E + T,

T → T \* F

E → T,

T → F

F → (E),

F → id

List all the LR(O) items for the grammar. 10

3. (a) Differentiate between Parse tree and Syntax tree. 4

(b) Draw Syntax tree for the following arithmetic expression (a\*(b+c)-d|2). Also write given expression in Postfix Form. 8

(c) Write quadruples, triples and indirect triples for the expression : 8

-(a+b)\*(c+d)-(a+b+c).

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4. (a) How is Scope information represented in Symbol Table ? **10**  
(b) Explain various data structures for Symbol Tables. **10**
5. (a) Explain the implementation of Block Structured Languages. **10**  
(b) Explain various storage allocation strategies in brief. **10**
6. (a) Explain Error Recovery in Operator Precedence Parsing. **10**  
(b) Explain Minimum Distance Correction of Syntactic Errors. <http://www.kuonline.in> **10**
7. (a) What are DAG's ? Write an algorithm for constructing DAG. **10**  
(b) What are various applications of DAG's ? **10**
8. (a) Explain Peephole Optimization in detail. **10**  
(b) What do you know about object program ? Discuss it and also explain various problems in Code Generation. **10**