

Code No: R05311201

R05**Set No. 2****III B.Tech I Semester Examinations, November 2010****AUTOMATA AND COMPILER DESIGN****Common to Information Technology, Computer Science And Systems
Engineering****Time: 3 hours****Max Marks: 80****Answer any FIVE Questions
All Questions carry equal marks**

1. Consider the following grammar:

 $S \rightarrow E\$$ $E \rightarrow E + E \mid E * E \mid (E) \mid I$ $I \rightarrow I \text{ digit} \mid \text{digit}$

- (a) Give the Syntax Directed Translation Scheme for the above grammar.

- (b) Find the sequence of moves for acceptance of an input string:
- $2\ 3\ *\ 5\ +\ 4\ \$$
- .
-
- [8+8]

2. (a) Let L be the set of all binary strings whose last two symbols are same. Design the NFA and find equivalent DFA.

- (b) Obtain the Regular Expression represented by the following Regular Set:
-
- $\{0, 1, 00, 01, 000, 001, 0000, 0001, \dots\}$
- .
-
- [12+4]

3. Explain the following:

- (a) Implementation of Stack allocation Scheme

- (b) Activation Record. [8+8]

4. Build the SLR(1) parsing table for the following grammar:

 $E \rightarrow E + T \mid T$ $T \rightarrow TF \mid F$ $F \rightarrow F * a \mid b$.
[16]

5. Explain the machine independent Optimization in Detail? [16]

6. Write and explain Unification algorithm. [16]

7. (a) What is recursive-descent parser? Explain.

- (b) Construct the recursive procedures for the following grammar:

 $E \rightarrow E + T \mid T$ $T \rightarrow T * F \mid F$ $F \rightarrow (E) \mid a$.
[16]

8. Write and explain about DAG? [16]

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R05**Set No. 4****III B.Tech I Semester Examinations, November 2010****AUTOMATA AND COMPILER DESIGN****Common to Information Technology, Computer Science And Systems
Engineering****Time: 3 hours****Max Marks: 80****Answer any FIVE Questions
All Questions carry equal marks**

1. (a) Let L be the set of all binary strings whose last two symbols are same. Design the NFA and find equivalent DFA.
(b) Obtain the Regular Expression represented by the following Regular Set:
 $\{0, 1, 00, 01, 000, 001, 0000, 0001, \dots\}$. [12+4]
2. Consider the following grammar:
 $S \rightarrow E\$$
 $E \rightarrow E + E \mid E * E \mid (E) \mid I$
 $I \rightarrow I \text{ digit} \mid \text{digit}$
 (a) Give the Syntax Directed Translation Scheme for the above grammar.
 (b) Find the sequence of moves for acceptance of an input string: $2\ 3\ *\ 5\ +\ 4\ \$$. [8+8]
3. Build the SLR(1) parsing table for the following grammar:
 $E \rightarrow E + T \mid T$
 $T \rightarrow TF \mid F$ [16]
 $F \rightarrow F * a \mid b$.
4. Explain the following:
 (a) Implementation of Stack allocation Scheme
 (b) Activation Record. [8+8]
5. Explain the machine independent Optimization in Detail? [16]
6. Write and explain Unification algorithm. [16]
7. (a) What is recursive-descent parser? Explain.
 (b) Construct the recursive procedures for the following grammar:
 $E \rightarrow E + T \mid T$
 $T \rightarrow T * F \mid F$
 $F \rightarrow (E) \mid a$. [16]
8. Write and explain about DAG? [16]

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R05**Set No. 1**

III B.Tech I Semester Examinations, November 2010
AUTOMATA AND COMPILER DESIGN
Common to Information Technology, Computer Science And Systems
Engineering

Time: 3 hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Let L be the set of all binary strings whose last two symbols are same. Design the NFA and find equivalent DFA.
 (b) Obtain the Regular Expression represented by the following Regular Set: {0, 1, 00, 01, 000, 001, 0000, 0001, ...}. [12+4]
2. Write and explain about DAG? [16]
3. (a) What is recursive-descent parser? Explain.
 (b) Construct the recursive procedures for the following grammar:
 $E \rightarrow E + T \mid T$
 $T \rightarrow T * F \mid F$
 $F \rightarrow (E) \mid a$. [16]
4. Explain the following:
 (a) Implementation of Stack allocation Scheme
 (b) Activation Record. [8+8]
5. Build the SLR(1) parsing table for the following grammar:
 $E \rightarrow E + T \mid T$
 $T \rightarrow TF \mid F$
 $F \rightarrow F * a \mid b$. [16]
6. Consider the following grammar:
 $S \rightarrow E\$$
 $E \rightarrow E + E \mid E * E \mid (E) \mid I$
 $I \rightarrow I \text{ digit} \mid \text{digit}$
 (a) Give the Syntax Directed Translation Scheme for the above grammar.
 (b) Find the sequence of moves for acceptance of an input string: 2 3 * 5 + 4 \$. [8+8]
7. Explain the machine independent Optimization in Detail? [16]
8. Write and explain Unification algorithm. [16]

Code No: R05311201

R05**Set No. 3****III B.Tech I Semester Examinations, November 2010****AUTOMATA AND COMPILER DESIGN****Common to Information Technology, Computer Science And Systems
Engineering****Time: 3 hours****Max Marks: 80****Answer any FIVE Questions
All Questions carry equal marks**

1. Explain the following:

- (a) Implementation of Stack allocation Scheme
- (b) Activation Record.

[8+8]

2. Write and explain Unification algorithm.

[16]

3. Consider the following grammar:

 $S \rightarrow E\$$ $E \rightarrow E + E \mid E * E \mid (E) \mid I$ $I \rightarrow I \text{ digit} \mid \text{digit}$

- (a) Give the Syntax Directed Translation Scheme for the above grammar.
- (b) Find the sequence of moves for acceptance of an input string: $2\ 3\ * \ 5\ +\ 4\ \$$.

[8+8]

4. (a) What is recursive-descent parser? Explain.

(b) Construct the recursive procedures for the following grammar:

 $E \rightarrow E + T \mid T$ $T \rightarrow T * F \mid F$ $F \rightarrow (E) \mid a.$

[16]

5. Build the SLR(1) parsing table for the following grammar:

 $E \rightarrow E + T \mid T$ $T \rightarrow TF \mid F$ $F \rightarrow F * \mid a \mid b.$

[16]

6. Explain the machine independent Optimization in Detail?

[16]

7. (a) Let L be the set of all binary strings whose last two symbols are same. Design the NFA and find equivalent DFA.

(b) Obtain the Regular Expression represented by the following Regular Set:

 $\{0, 1, 00, 01, 000, 001, 0000, 0001, \dots\}.$

[12+4]

8. Write and explain about DAG?

[16]
