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Courses » Introduction to Automata, Languages and Computation

Announcements **Course** Ask a Question Progress FAQ

Unit 10 - Week 9

Register for
Certification exam

Course outline

How to access
the portal

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

- Lecture 41 :
Leftmost and
Rightmost
derivations
- Lecture 42 :
Ambiguity in
CFG
- Lecture 43 :
Simplification of
CFG
- Lecture 44 :
Algorithms to

Assignment 9

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment. **Due on 2019-04-03, 23:59 IST.**1) 1 point

Which of the following statements are true?

I: Every left-recursive grammar can be converted to a right-recursive grammar and vice-versa

II: All ϵ productions can be removed from any context-free grammar by suitable transformations

III: The derivation trees of strings generated by a context-free grammar in Chomsky Normal Form are always binary trees

- (a) I, II & III
 (b) II & III
 (c) I & III
 (d) None of the above

- a.
 b.
 c.
 d.

No, the answer is incorrect.**Score: 0****Accepted Answers:**

c.

2) Let P be a regular language and Q be context-free language such that $Q \subseteq P$. Then which of the following is ALWAYS regular? 1 point

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- Lecture Material
- Quiz : Assignment 9
- Feedback for Week 9

- Week 10**

- Week 11**

- Week 12**

- DOWNLOAD VIDEOS**

- Solution**

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a.

b.

c.

d.

No, the answer is incorrect.
Score: 0

Accepted Answers:
c.

3) **1 point**

Let G be a CNF. To derive a string of terminals of length x , the number of productions to be used is

(a) $2x - 1$

(b) $2x$

(c) $2x + 1$

(d) 2^x

a.

b.

c.

d.

No, the answer is incorrect.
Score: 0

Accepted Answers:
a.

4) **1 point**

After converting given CFG to CNF how many productions are there?
(Given CFG has six productions : $S \rightarrow ASA|aB, A \rightarrow B|S, B \rightarrow b|\epsilon$)

(a) 18

(b) 19

(c) 20

(d) None of the above

a.

b.

c.

d.

No, the answer is incorrect.
Score: 0

Accepted Answers:
d.

5) **1 point**

Every grammar in Chomsky Normal Form is:

- (a) context free
- (b) regular
- (c) Both
- (d) Neither

- a.
- b.
- c.
- d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

6)

1 point

Which of the production rule can be accepted by Chomsky grammar?

- (a) $A \rightarrow BC$
- (b) $A \rightarrow a$
- (c) $S \rightarrow \epsilon$
- (d) All of the mentioned

- a.
- b.
- c.
- d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

d.

7)

1 point

Given grammar G: (1) $S \rightarrow AS$ (2) $S \rightarrow AAS$ (3) $A \rightarrow SA$ (4) $A \rightarrow aa$

Which of the following productions denies the format of Chomsky Normal Form?

- (a) 2,4
- (b) 1,3
- (c) 1,2,3,4
- (d) 2,3,4

- a.
- b.
- c.

d.

No, the answer is incorrect.


Score: 0


Accepted Answers:


a.

8)


1 point

Which of the following grammars are in Chomsky Normal Form: 

(a) $S \rightarrow AB|BC|CD, A \rightarrow 0, B \rightarrow 1, C \rightarrow 2, D \rightarrow 3$ 

(b) $S \rightarrow AB, S \rightarrow BCA|0|1|2|3$ 

(c) $S \rightarrow ABa, A \rightarrow aab, B \rightarrow Ac$ 

(d) All of the above mentioned 

a.

b.

c.

d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

9)

1 point

With reference to the process of conversion of a context free grammar to CNF, the number of variables to be introduced for the terminals are:

$S \rightarrow Ba$

$A \rightarrow aab$

$B \rightarrow Ac$

(a) 3

(b) 4

(c) 2

(d) 5

a.

b.

c.

d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

10)

1 point

Let G be a grammar: $S \rightarrow AB|\epsilon$, $A \rightarrow a$, $B \rightarrow b$ Is the given grammar in CNF?

(a) Yes

(b) No

a.

b.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

Previous Page

End