Unit 10 - Week 9

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) 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

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 ⊆ P. Then which of the following is ALWAYS regular?

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

3)

(a) $2x - 1$
(b) $2x$
(c) $2x + 1$
(d) $2^x$

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

4)

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

(a) 18
(b) 19
(c) 20
(d) None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
d.
Every grammar in Chomsky Normal Form is:

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

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

6)
Which of the production rule can be accepted by Chomsky grammar?

(a) \( A \rightarrow BC \)
(b) \( A \rightarrow a \)
(c) \( S \rightarrow \varepsilon \)
(d) All of the mentioned

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

7)
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

No, the answer is incorrect.
Score: 0
Accepted Answers:
a.
8) 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) $S \rightarrow AB$, $S \rightarrow BC|A|0|1|2|3$

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

(d) All of the above mentioned

9) 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

No, the answer is incorrect.

Score: 0

Accepted Answers:

10)

No, the answer is incorrect.

Score: 0

Accepted Answers:
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

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