Ubaidullah Waheed (20L-0974)

Theory of Automata | Quiz | Date: 25-10-2022

Name: | Roll Number:

Q: Write CFG for the given language.Also write first 10 string for the given language in canonical order?

L = Number of 'a' occurs twice as number of 'b'

$L = \{ \Lambda, aab, aba, baa, aaaabb, aaabab, aabaab, abaaab, baaaab, baabba, baabaa, babaaa, bb, aaaa, \ldots\ldots\ldots \}$

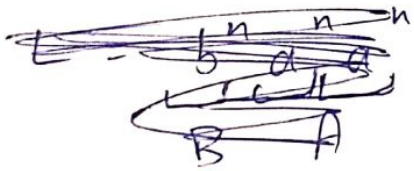
when $b = 1, a = 2$

$b = 2, a = 4$, so on

So,

$L = \{ b^n a^{2n} \}$

15



$L = \underbrace{b^n a^n}_{A} \underbrace{a^n}_{B}$

$S \rightarrow AB$

$A \rightarrow bSa \mid baa \mid \Lambda$

$B \rightarrow aS \mid \Lambda$

baaaS

baaabSa

baaabaa

Theory of Automata | Quiz | Date: 25-10-2022

Name: M. Ahmed Khan | Roll Number: 19L-2707

Q: Write CFG for the given language. Also write first 10 string for the given language in canonical order?

$L = \{a^i (b^j c^k)^n d^i ; i>=0 ; j<k ; n=2i\}$

1

B

$L = \{\lambda, acdd, abbbccccd, aaccccddd, abbbbccccccddd, \ldots\}$

02

S → a B d

S → a bbcccd

B → b B c

B → null

aBd

abBcd

abcd X

02

02

(20L-0987) Muhammad Ahmad

Date: 25-10-2022

Theory of Automata

Quiz

Name: M. Ahmad

Roll Number: 20L-0987

Q. Write CFG for the given language. Also write first 10 string for the given language in canonical order?
L = number of a's occurrence is not equal to the number of b's occurrence

L = { a, b, aa, bb, aaa, abb, aab, aba, baa, bbb, bab, bba, aaaa, aaab, ... }

Start state: S → A | B

Base cases

S → A | AS | ASθ

θ → B | Bθ | BθS

A → a

B → b

Terminals = { S, θ, A, B }

Variables = { a, b }

07

AS
aASθ
aaBSθ
aaabθa
aaabbθa
aaaabbbb

ASa
aaaBθ
aaabθa
aaabbb

S → a | aSa | aSbS

θ → b | bθ

aS | bS

A SS | a

SB

void S(int c)
{ cout << 'a';
S(c)
S2(c)

void S2()
{ cout << 'b'

a

ab, b

aa bb ab

ba