All Me variables are

terminal productions,

Steppe 32 Ablen converting

D-) NP

S -> AACD

A-> aAblac/E

e -> ac/a

D-> aDa/bDb/d/E

Step-1: The null variables are A and D.

After removing &-productions.

S-> AACD ACD CD AAC AC C

A-> aAblaclab

c > acla

D-> aDa | bDb | d | aa | bb

Step-2: After removing want unit production, we get,

S-> AACD/ACD/CD/AAC/AC/aC/a

A-> aAblaclab

e-> acla

D -> aDa | bDb | d | aa | bb

All the variables are reachable and have terminal productions. Blook A

Step-3°. After converting to ENF,

S->XY |ZD |CD |XC |AC |PC |a

A -> Mg/PR/PB

c-> PC | a

After removing 3-productions. D-> NP1001PP1881d

 $X \rightarrow AA$

y -> CD

Z -> AC

 $P \rightarrow \alpha$

 $d \rightarrow b$

R -> C

M -> PA

N -> PD

 $0 \Rightarrow 3D$

(Ams) Des a Da book of aa

de las dAs <-A

8x 188 X x-,8

X -> PXS PPPX

6 1 66 19 X9 <-8

 $S \rightarrow XSB \mid E$ $X \rightarrow PXS \mid P$ $B \rightarrow SbS \mid X \mid bb$

Step-1: Adding new state,

S'-> Somor provisos anno privamos :4-9212

S->XSB/E

X -> PXSIP

B -> SbS | x | bb

Step-2: Variable S is nullable.

Removing 2-productions

s'-> S

S -> XSB | XB

 $x \rightarrow pxslplpx$

B-> S63 | X | 66 | 65 | 36 | 6

Step-3: Removing unit productions,

S'-> XSB|XB

S-> XSB|XB

X-> PXS|P|PX

B-> SbS|PXS|P|PX|bb|bs|Sb|b

Step-4: Removing unnecessary variables,

S'-> XXXX XB

X -> PX | P

B-> PX | P | bb | b

Step-5: Converting to ENF,

S' \rightarrow XB

X \rightarrow YX|P

B \rightarrow YX|P|WW|B

W \rightarrow B

J \rightarrow P

(Ans.)

3-> 11/21/21/11/22

0 0 1 1 1 1 1 0 5 4

S -> aAa | bBb 1 &

A -> Cla

B-> C16

c-> eDIE

D-> AlBlab

3tep-1: Removing E-productions.

S-> aAalbBblaalbb

A -> ela

B-> cla

c -> cD/D

D-> AlBlab

Step-23 hemoving unit productions

S-> aAa | bBb | aa | bb

A -> cD | a | b | ab

B-> colalblab

e -> cD | a | b | ab

D-> CD | a | b | ab

All the variables are reachable and have S -> all block terminal productions.

dolara ed

90/3/11 <-1

Step-3: Converting to CNF, S-> YM | ZN | YY | ZZ A -> CD | 72 | a | b B-> CD | YZ | a | b c -> cD | YZ | a | b D-> CD | YZ | a | b

 $y \rightarrow \infty$

 $z \rightarrow b$

KA <- M

N -> BZ

(Ans)

D-> 00 00 6 06

{5,x,y,z}					1881
{x,z3	{S,X,Z}			Ex. S	(813)
23	{S,x4	95, x, y)	[3]	(X18)	7
5.9	5 ~ 7.	(1		JX3	
189	27]	{3,29	27,29	(- X)	1.233
N	n	y	y A		

we can see that (1,4) contains S variable.

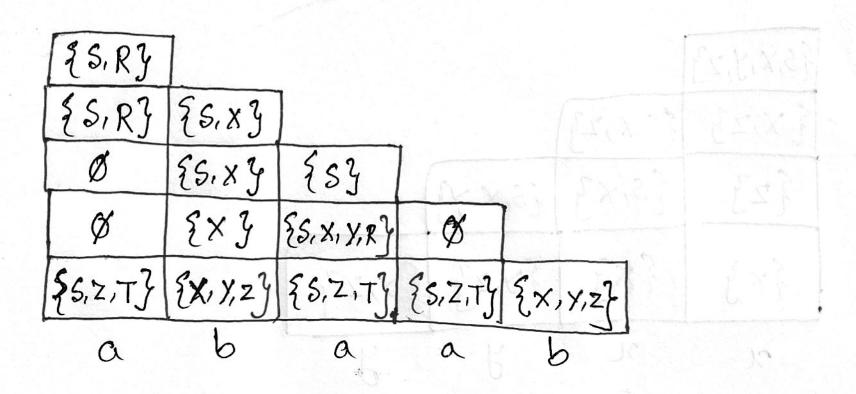
: "nnyy" \(\) \(\) \(\)

2(6)

[6,Z]				
{5,x,z}	र् ४,४३			
रिप्रे	273	25,23		
Eyz	{S,Z}	ES,X3	{5,Z}	
{X, Z}	{x,z}	{ y}	{x,z3	{x}
n	N	J	N	y

(1.5) contains S variable.

:, "nnyny" & L(00)



(1,5) contains S variable.

:. "abaab" & L(G)

(6)

(15) contains 3 variable

(20) 7 3 "Rachano