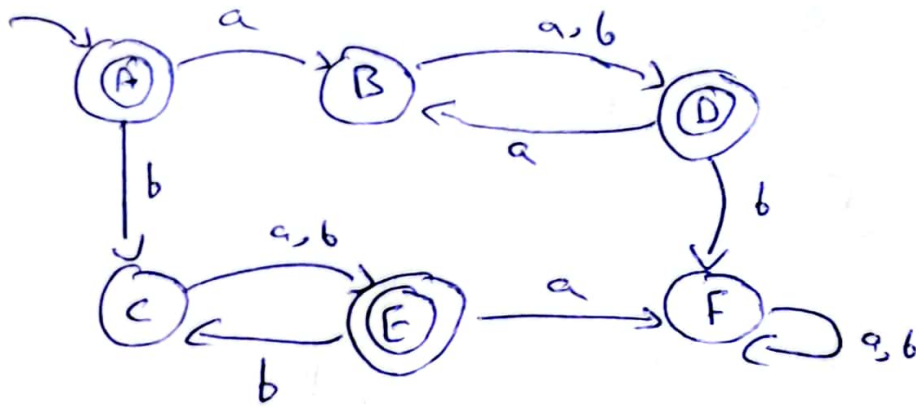


Q1) Minimize the following DFA:



PS	a	b
A	B	C
B	D	D
C	E	E
D	B	F
E	F	C
F	F	F

$$P_0 = (BC\bar{F}) (ADE)$$

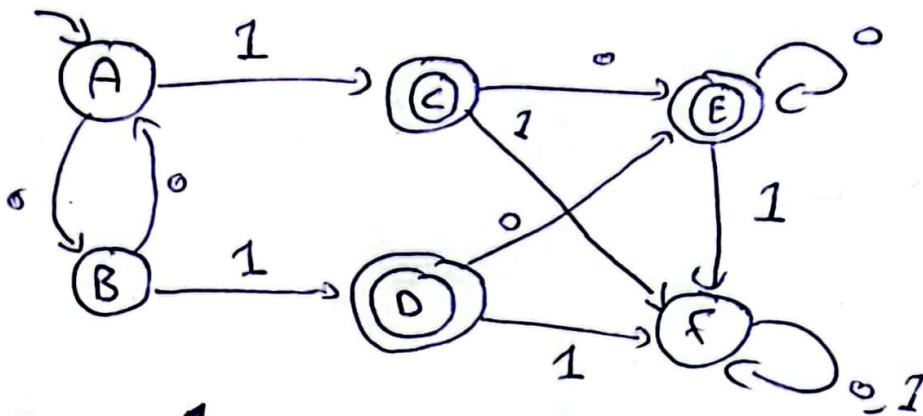
$$P_1 = (BC) (F) (A\bar{D}\bar{E})$$

$$P_2 = (BC) (F) (A) (D)(E)$$

$$P_3 = (B) (C) (F) (A) (D)(E)$$

It is already in the minimized form

Q2)



PS	0	1
A	BA	C
B	A	D
C	E	F
D	E	F
E	E	F
F	F	F

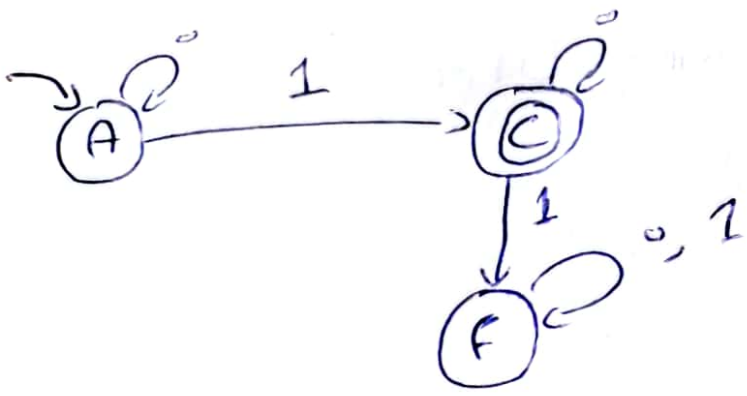
$$P_0 = (AB\bar{F}) (CDE)$$

same { $P_1 = (AB) (F) (CDE)$

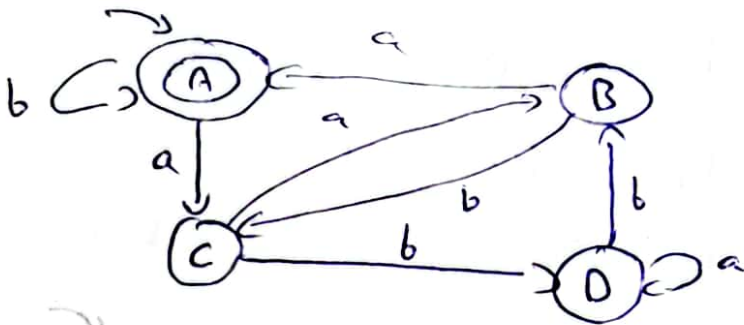
$P_2 = (AB) (F) (CDE)$

so

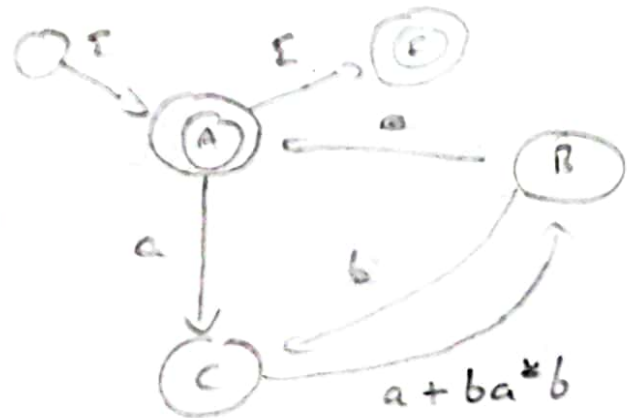
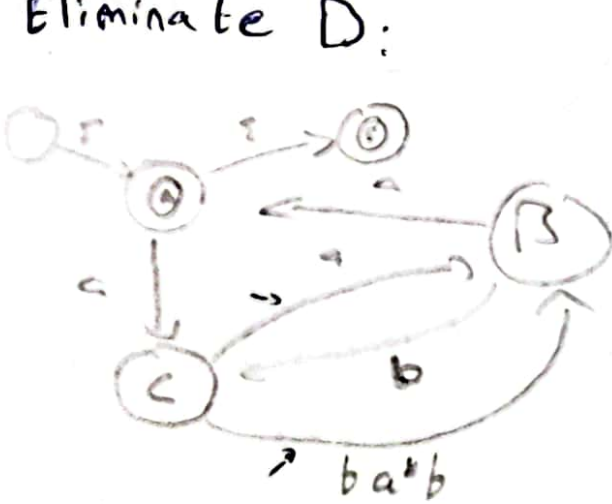
PS	0	1
A	A	C
C	C	F
F	F	F



Q3. Write the equivalent RE for the following DFA:

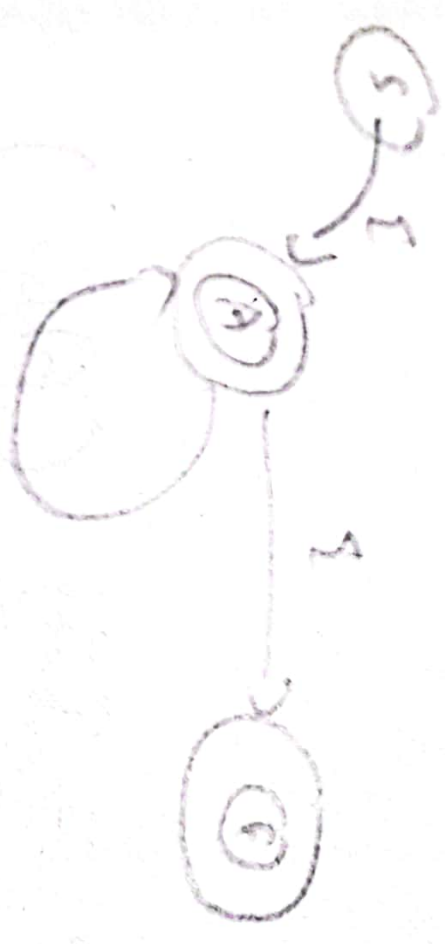


Eliminate D:

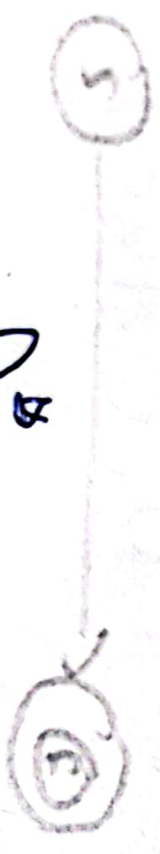




$$a \left[(a + b a^b) (b (a + b a^b))^b \right]^a$$



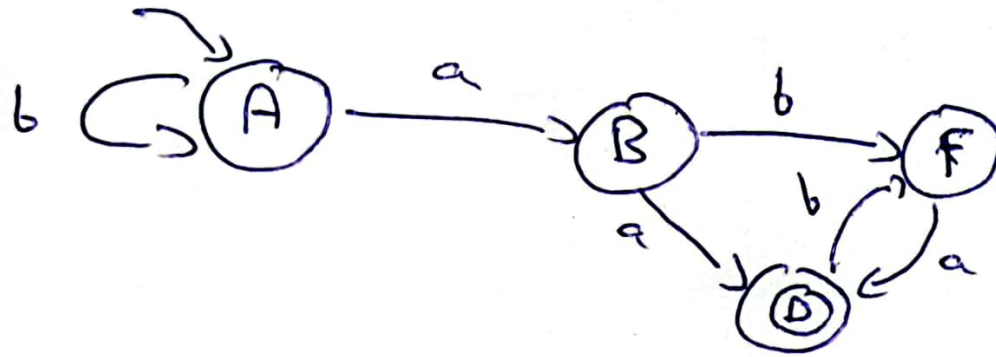
$$a \left[(a + b a^b) (b (a + b a^b))^b \right]^a \quad a + b = D$$



$$D^a$$

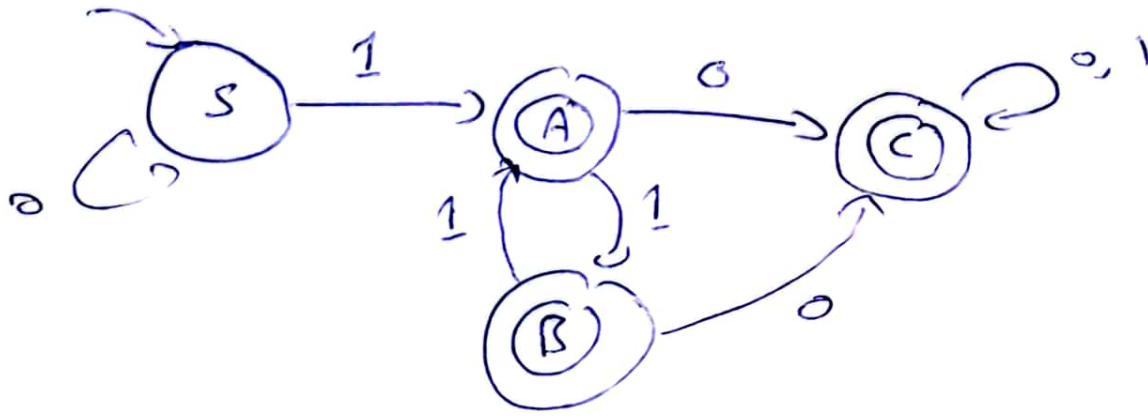
D⁵

Q4) Write the equivalent RE for the following DFA:



$$RE = b^* a (a + ba)(ba)^*$$

Q5) Minimize the following DFA.



PS	0	1
S	S	A
A	C	B
B	C	A
C	C	C

$P_0 = (S) (ABC)$
 $P_1 = (S) (ABC)$
 $P_2 = (S) (ABC)$
 no need to P_2

then

PS	0	1
S	S	C
C	C	C

