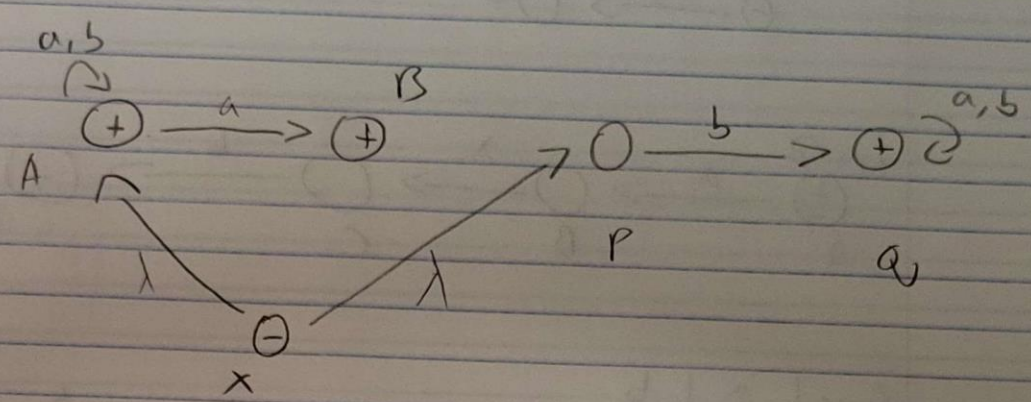
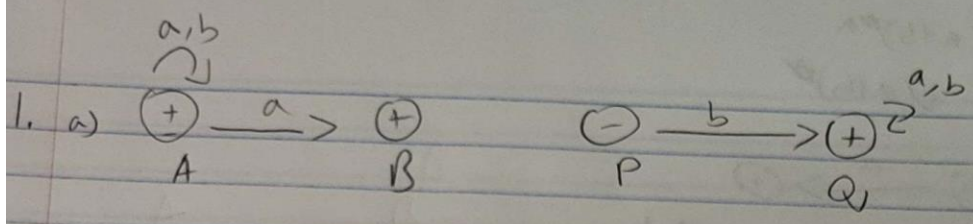
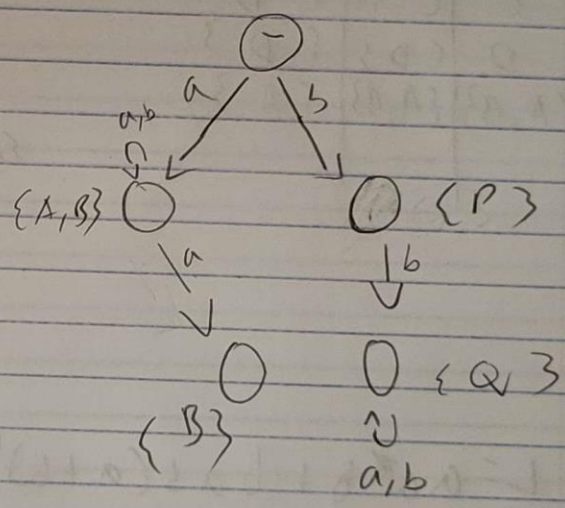


$$L_1 = (a+b)^*a$$

$$L_2 = b(a+b)^*$$



State	a	b
X	{A, B}	{Q}
A	{A, B}	{ }
B	{ }	{ }
P	{ }	{Q}
Q	{Q}	{Q}
{A, B}	{A, B}	{A}



$$L = a(a+b)^*a + b(a+b)^*$$

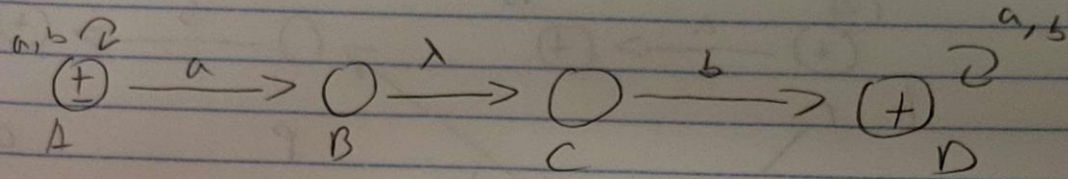
$$L_1 = (a+b)^*a$$

$$L_2 = b(a+b)^*$$

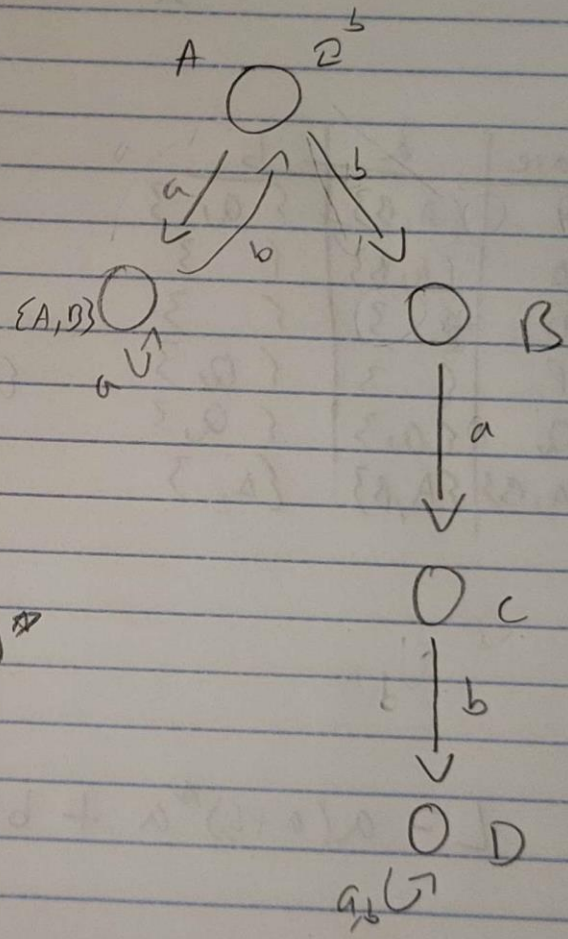
1. b)

$$\textcircled{+} \xrightarrow{a} \textcircled{+}$$

$$\textcircled{-} \xrightarrow{b} \textcircled{-} \xrightarrow{a,b}$$

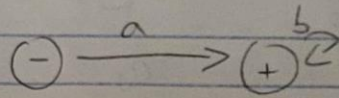


State	a	b
A	{A, B}	{A}
B	{C}	{ }
C	{ }	{ D }
D	{ D }	{ D }
{A, B}	{A, B}	{A}

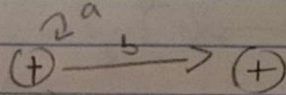


$$L = a a^* b + b a b (a+b)^*$$

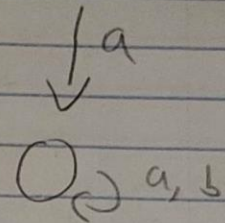
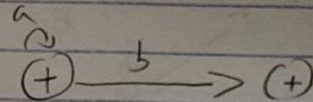
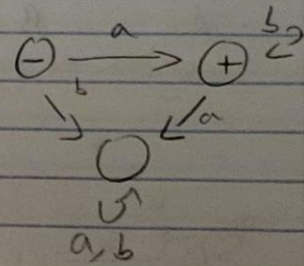
2. ① $L_1 = a b^*$



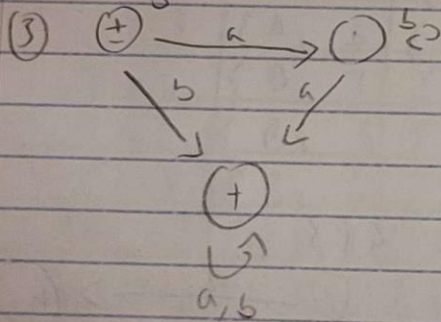
$L_2 = a^* b$



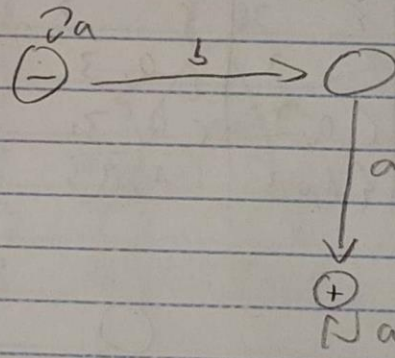
②

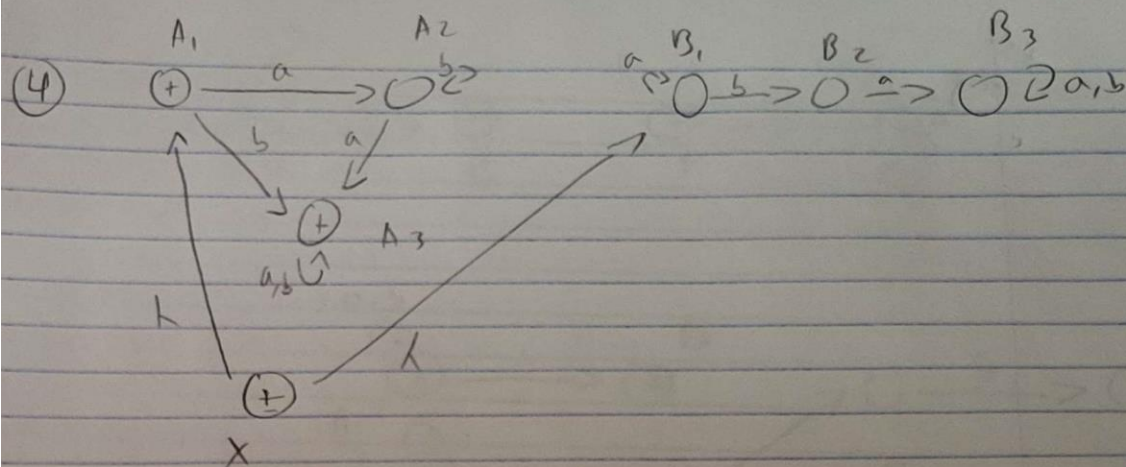


$L_1 = a b^*$



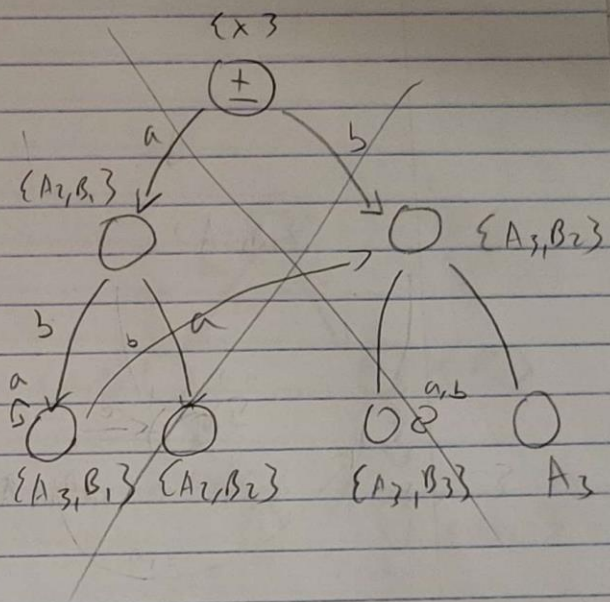
$L_2 = a^* b$



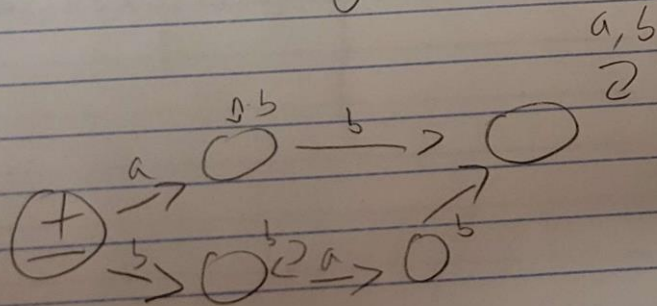
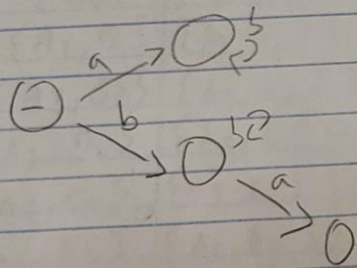


⑤

State	a	b
{X}	{A2, B1}	{A3, B2}
{A1}	{A2}	{A3}
{A2}	{A3}	{A2}
{A3}	{A3}	{A3}
{B1}	{B1}	{B2}
{B2}	{B3}	{B3}
{B3}	{B3}	{B3}
{A2, B1}	{A3, B1}	{A2, B2}
{A3, B2}	{A3, B3}	{A3}
{A3, B1}	{A3, B1}	{A3, B2}
{A2, B2}	{A3, B3}	{A3, B3}
{A3, B3}	{A3, B3}	{A3, B3}



3. $L = a b^* + b^* a$



$L = a b^* (a + b)^* + b^* a b (a + b)^*$