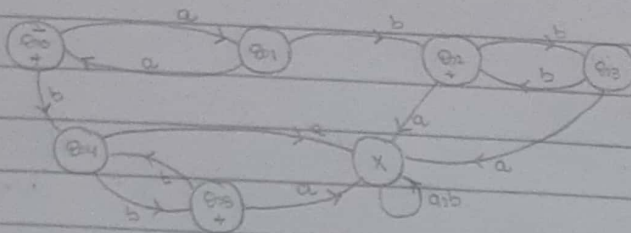


THEORY OF AUTOMATA

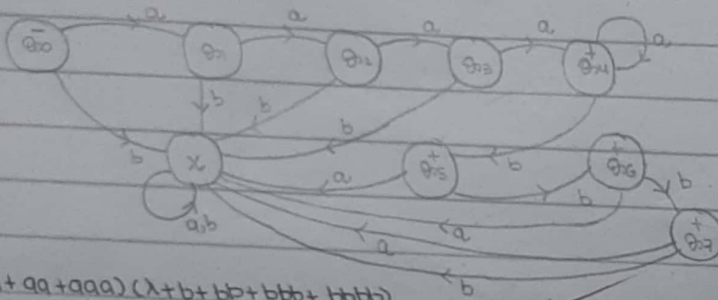
ASSIGNMENT 1

Date: _____

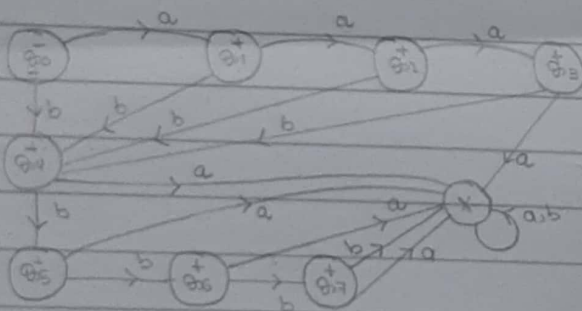
L1: $a(aa)^* \cdot b(bb)^* + (aa)^* \cdot (bb)^*$



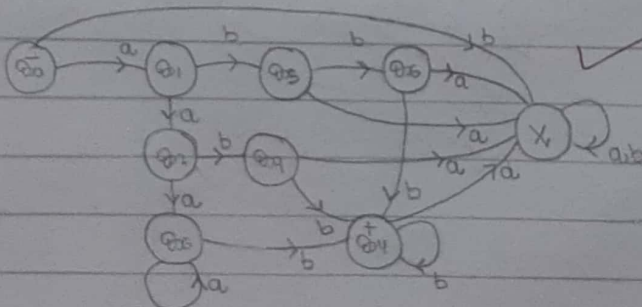
L2: $(aaaa)a^* (\lambda + b + bb + bbb)$



L3: $(\lambda + a + aa + aaa)(\lambda + b + bb + bbb + bbbb)$



L4: $(aaa)a^*b^+ + a^+(bbb)b^* + (aa)(bb)b^*$



L5: $abbb(b)^* (a+b)^+$

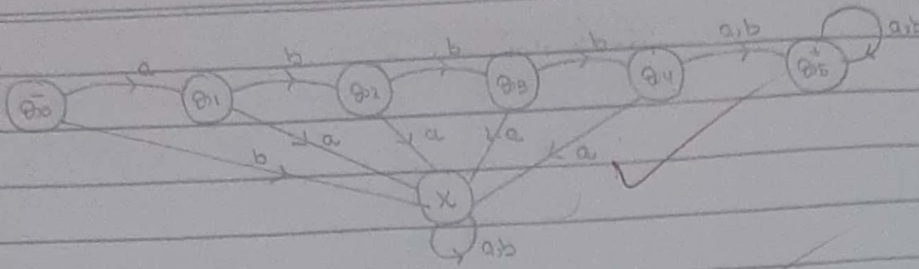
→ FB

Signature: _____

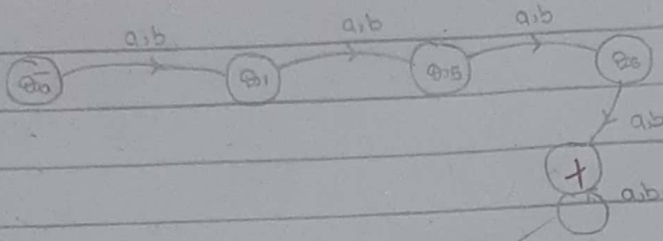
UNIQUE

No. _____

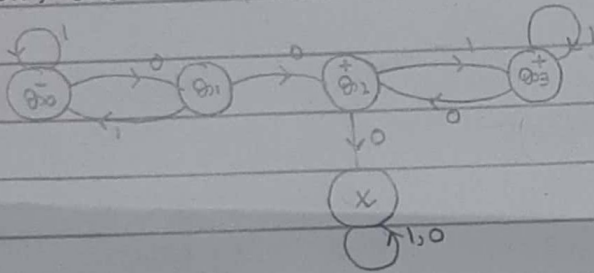
Date: _____



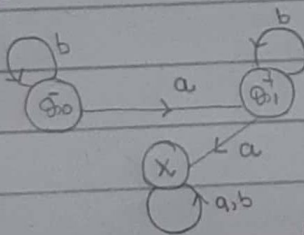
6: $(aa+bb+ab+ba)(a+b)^*(aa+bb+ab+ba)$



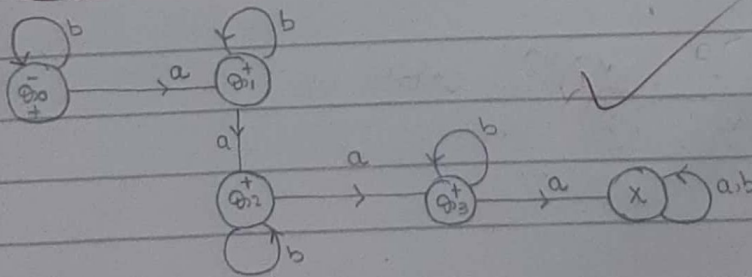
7: $1^*(011^*)^*00(11^*0)^*1^*$



8: b^*ab^*



9: $b^*(a+aa+aaa+\lambda)b^*$ *Consecutive aas* $b^*(a+\lambda)b^*(a+\lambda)b^*(a+\lambda)b^*$

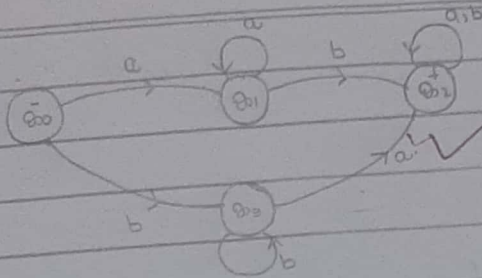


10: $(a+b)^*b(a+b)^*a(a+b)^* + (a+b)^*a(a+b)^*b(a+b)^*$

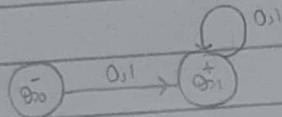
→ FA

Starting or ending with diff letters.

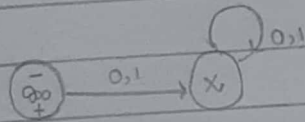
Date _____



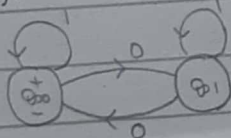
L11: $(0+1)^+$



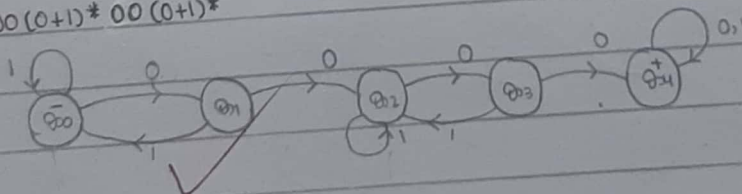
L12: λ



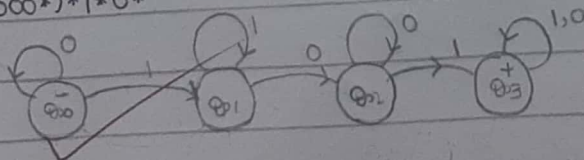
L13: $1^*(1^*01^*01^*)^*$



L14: $(0+1)^* 00 (0+1)^* 00 (0+1)^*$

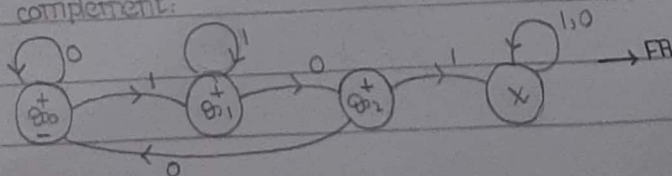


L15: $0^*(1^*000^*)^*1^*0^*$



containing 101

Now take its complement:

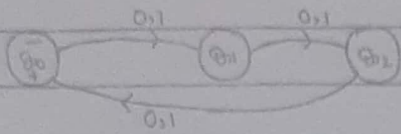


Signature _____

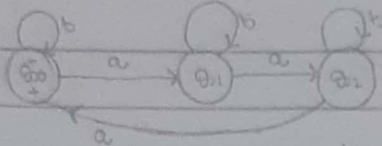
UNIQUE

No. _____

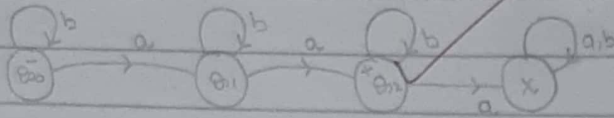
16: $((0+1)(0+1)(0+1))^*$



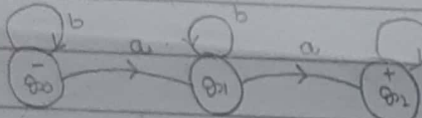
17: $(b^*ab^*ab^*ab^*)^* + b^*$



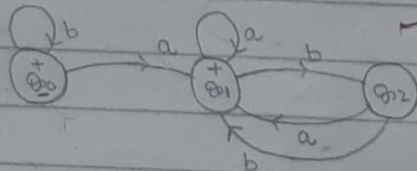
18: $b^*ab^*ab^*$



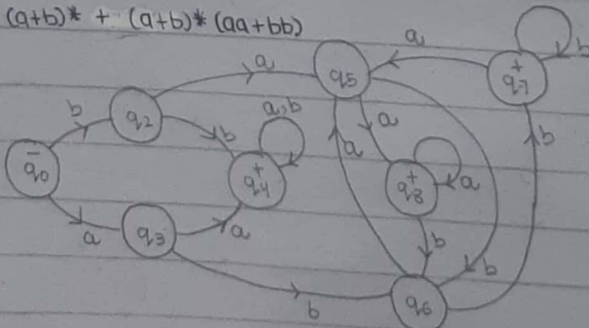
19: $(a+b)^*a(a+b)^*a(a+b)^*$



20: $(a+b)^*(aa+bb+ba) + \lambda + a+b$

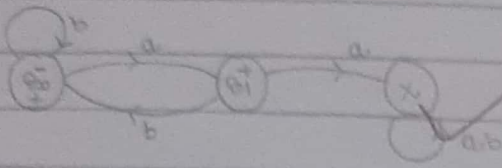


21: $(aa+bb)(a+b)^* + (a+b)^*(aa+bb)$

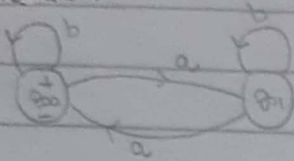


22: $(b+ab)^*(ba)^*$

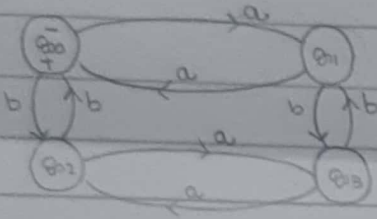
→ FA



123: $b^+(b^+ab^+ab^+)^*$

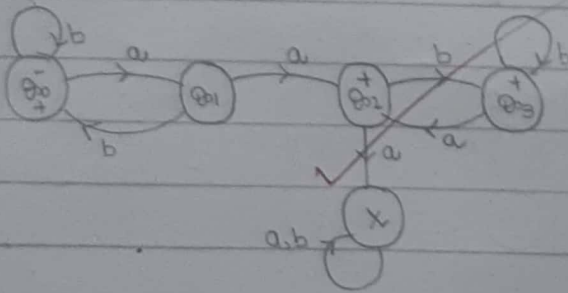


124: $[aa+bb+(ab+ba)(aa+bb)^*(ab+ba)]^*$

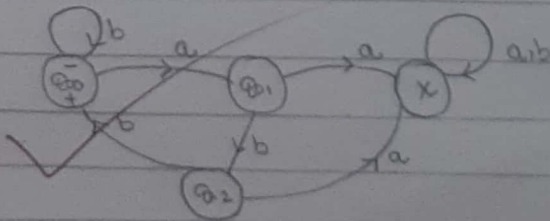


even even language

125: $(b+ab)^*(\lambda+q+aa)(b+ba)^*$



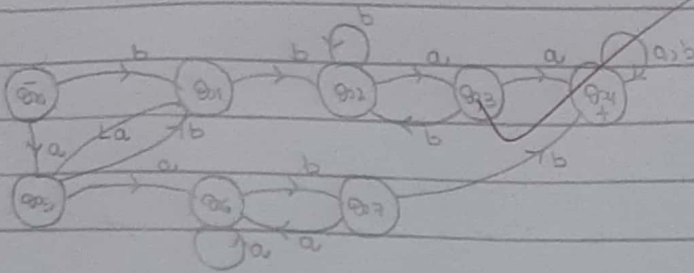
126: $(b+abb)^*$



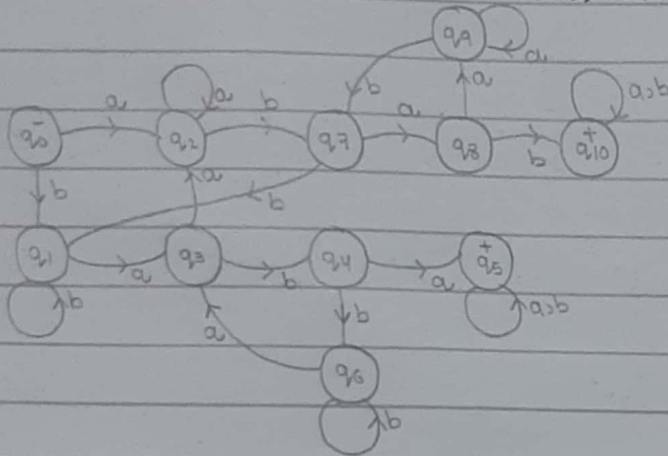
127: $(a+b)^*b^+(a+b)^*aa(a+b)^* + (a+b)^*aa(a+b)^*bb(a+b)^*$

→ FH

Date _____



128: $(a+b)^* bab (a+b)^* aba (a+b)^* + (a+b)^* aba (a+b)^* bab (a+b)^*$



$$\Rightarrow (a+b)^* baba (a+b)^* +$$

$$(a+b)^* abab (a+b)^*$$

