Q) $L = \{ w \in \{a, b\}^* \mid w$ contains both substring of aa and bb.

This is a regular grammer and we can write the expression for it. Regular expression: $RE = a(a+b)^* a + b(a+b)^* b$

$$S \to aAa \mid bAb \mid a \mid b \mid \epsilon$$
$$A \to aA \mid bA \mid \epsilon$$

Q) DFA : $L = \{ w \in \{a, b\}^* \mid w$ does not contains substring $abab$.