

Brandon

1) $ABBA = 10101010$
 $X^1 = AB = 10101000$
 $X^2 = BA = 10110001$
 $Key = CS = 11000101$

$Y_1 = X^1 \oplus Key = 10101000 \oplus 11000101 = 01101101$

$LT = 1010$ $RT = 1000$

$RT = 1000$

$Y_1 = 01101101$

$LC = LK \oplus RT = 1100 \oplus 1000 = 0100$

$RC = RK \oplus LT = 0101 \oplus 1010 = 1111$

$Y_1 = LC || RC = 0100 1111 = \underline{4F}$

$Y_2 = (1011 1001)$

$LT = 1011$

$RT = 1001$

$LC = LK \oplus RT = 1100 \oplus 1011 = 0111$

$RC = RK \oplus LT = 0101 \oplus 1001 = 1100$

$Y_2 = LC || RC = 0111 1100 = \underline{7C}$

ECB output
4F7C