

## **Example C.2**

John sells a call option on stock XYZ with 6 months to expiration and a strike price of \$100 for a premium of \$8.04. The risk free rate is 4% convertible semiannually. Calculate (i) John's payoff, and (ii) John's profit if the price of the stock XYZ in 6 months is \$110.

Solution

We have  $K = 100$ ,  $S = 110$ ,  $\text{Call}(100, 6 \text{ Months}) = \$8.04$ ,  $r = 4\%$ .

(i): We get  $-\max\{S - K, 0\} = -10$ .  $\rightarrow$  John's payoff is  $-\$10$ .

(ii): We get  $-\max\{S - K, 0\} + \text{FV}[\text{Call}(K, T)] = -10 + 8.04 * 1.02 = -\$1.80$   
 $\rightarrow$  John's profit is  $-\$1.80$ , that means that he loses money on the transaction.