

## Chapter 6 Practice Questions

### Question 6.5

A 15-year bond with a face amount of \$100 pays semiannual coupons of 4% per year and is to be redeemed for \$105. The bond is priced to yield 5% per year, convertible semiannually. Determine the price of the bond.

### Question 6.6

Using the information from Question 6.5, determine the book value of the bond immediately after the 10th coupon is paid.

### Question 6.7

Using the information from Question 6.5, determine the amount of principal amortized in the 11th coupon payment.

### Question 6.8

For a certain bond that pays semiannual coupons, it has been determined that the amount of premium amortized in the 10th payment is \$0.305135 and the amount of premium amortized in the 15th coupon payment is \$0.345233. Determine the bond's annual effective yield.

### Question 6.9

A bond that has just been issued pays coupons of 10% a year payable semiannually. The yield expressed as a nominal rate compounded semiannually is 6% and the price paid per \$1,000 par value is \$1,235. The bond is to be redeemed after 10 years. By first finding the redemption value, find the interest earned in the 9th coupon payment.

### Question 6.10

A bond with a \$1,000 face amount pays semiannual coupons at a rate of  $X$  % per year. The bond has 20 years to maturity and is priced to yield 6% compounded semiannually. The bond's price is \$884.426140. Determine the bond's semiannual coupon payment.

### Question 6.19

SOA/CAS

You have decided to invest in two bonds. Bond X is an  $n$ -year bond with semiannual coupons, while bond Y is an accumulation bond redeemable in  $\frac{n}{2}$  years. The desired yield rate is the same for both bonds. You also have the following information:

Bond X

- Par value is \$1,000.
- The ratio of the semiannual bond rate to the desired semiannual yield rate,  $\frac{r}{i}$ , is 1.03125.
- The present value of the redemption value is \$381.50.

Bond Y

- Redemption value is the same as the redemption value of bond X.
- Price to yield is \$647.80.

What is the price of bond X?

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Q6.5: \$91.92

Q6.6: \$95.26

Q6.7: \$0.38

Q6.8: 5.06%

Q6.9: \$33.60

Q6.10: \$25.00

Q6.19: \$1,055.09