IE 342 2019-2020 Fall

Study Set 2

Please do not submit your answers as they will not be graded!!

(Solutions will not be provided)

1) Allied Materials needs $3 million in debt capital for expanded composites manufacturing. It is offering small-denomination bonds at a discount price of $800 for a 4% $1,000 bond that matures in 20 years with a dividend payable semiannually. Find the yield to maturity.

   Answer: 5.7678%

2) Bilge wants to buy a house that will cost $120,000. She will make a down payment of $18,000 and take out a mortgage on the rest of the money at 9% compounded monthly.
   a. What will be her monthly payments to pay off the mortgage in 7 years?
   b. Bilge has made 24 payments and wants to figure out remaining balance immediately after the 24th payment. What is that balance?

   Answer: a) $1,642.2 b) $79,110.3575

3) Seda purchased a $1,000, 9.50 % semiannual bond for $1,010. If she sells the bond at the end of three years and six coupon payments, what should the selling price be to yield a 10% return on the investment?

   Answer: $1030.4265

4) A loan company offers money at 2.4% per month, compounded monthly.
   a. What is the nominal interest rate?
   b. What is the effective annual interest rate?
   c. How many years will it take for an investment to triple?
   d. How many years will it take for an investment to triple if the nominal rate is compounded continuously?

   Answer: a) 28.8% b) 32.92% c) 3.8605 years d) 3.8146 years

5) HP stock price as of the end of 2017 is $105/share. The expected dividend in 2017 is $5 and the dividend payments are expected to grow by 3% for 4 years (increases by 3% in each year). The expected stock price at the end of 3 years will be $120/share. You expect 11% return on your investment. By considering 3 years only, would you buy the stock or not? Why?

   Answer: The stock is overpriced, do not buy it.

6) A car company is advertising a 16-month lease of a car for $560/month. The lease requires a $3,000 down payment at the beginning of the lease and a $300 disposition fee paid at the end of

the lease. As an alternative, the company offers a 16-month lease with a single up-front payment of $11,900, plus a $400 refundable security deposit paid at the beginning of the lease. The security deposit will be refunded (as $400) at the end of 16-month lease. Assuming an interest rate of 9%, compounded monthly, which lease is more preferable?

Answer: Option 1 is more preferable

7) A company has two bond issues outstanding. Both bonds pay $100 semiannual interest, plus $1,000 at maturity. Bond 1 has a remaining maturity of 15 years and bond 2 has a maturity of 1 year. What is the value of each of these bonds today, when the market interest rate of the bonds is 9%?

Answer:

Bond 1: $1895.89

Bond 2: $1102.996

8) Mr. Johnson wants to buy a new car that will cost $36,000. He will make a down payment in the amount of $20,430. He would like to borrow the remainder from a bank at an interest rate of 12% compounded monthly. He agrees to pay off the loan monthly for a period of three years.

a. What is the amount of monthly payment?

b. What is the balance remaining immediately after the 18th payment? What is the interest and principal payments of the 18th payment?

Answer:

a)

A= $ 517.1469

b) 8,480.36 is the remaining payment. Interest payment $89.08 and principal payment $428.07