1. Which of the following is correct about money market instruments?

   a) They are very short-term debt instruments that meet the needs of investors who want to invest in liquid assets.

      Yes. Money market instruments are short-term debt instruments. Refer to the lecture slides to review money market instruments.

   b) An important channel for the U.S. Federal Reserve to conduct its monetary policy

      Yes. The U.S. Federal Reserve conducts its monetary policy by influencing the availability and the cost of liquidity through the Federal Funds market. Refer to the lecture slides to review money market instruments.

   c) They include long-term corporate debt issues.

      No. Long-term corporate debt is not part of the money market. Money market instruments are short term debt instruments. Refer to the lecture slides to review money market instruments.

   d) a and b.

      Yes, both A and B are correct.

   Answer:

   The correct answer is **d**.

2. What is the value of a 5-year 10% coupon bond with face value of $1000 if the yield is 4% per year? Assume that coupon payments are semi-annual. Round off to two digits after the decimal point. (i.e. "x.xx")

   Answer:

   The correct answer is **1,269.48**.

   Refer to the lecture handouts and the note on bond valuation.

   The value of a coupon bond is equal to the present value of its coupon payments plus the present value of its face value.

   B0 = PV(coupons) + PV(face value)

The value of a coupon bond is equal to the present value of its coupon payments plus the present value of its face value.

B_0 = PV(coupons) + PV(face value)

C = $50 every six months with 10 coupon payments, Face Value = $1000

PV(coupons) = 50 x ADF(r = 4%/2, n = 5 x 2)

PV(face value) = $1000/(1.02)^{10}$

$B_0=50\times[(1-1/(1.02)^{10})/0.02]+1000/(1.02)^{10} = 1269.48$

3. One of the most common money market instruments are U.S. Treasury bills. Find the price of a $10,000 face value Treasury bill with 81 days to maturity if it is quoted at a discount of 2.54 percent. Round off to two digits after the decimal point. (i.e. "x.xx")

   Answer:

   The correct answer is **9,942.85**.

   Treasury bill prices are computed as B0 = Face value × (1 – d×D/360)

   Refer to the lecture handouts to review calculating Treasury bill prices.

   In this case, face value = $10,000 d = 0.0254 and D = 81

   B_0 = Face value × (1 – d×D/360) = 9,942.85

4. Refer to Question 3. What would be your yield to maturity if you bought this Treasury at this price and kept it until maturity? Round off to two digits after the decimal. (i.e. "x.xx")

   Answer:

   The correct answer is **2.25**.

   The yield to maturity is the discount rate that makes the present value of the bond's cash flows equal to its price. Remember that the yield to maturity is expressed as an annual percentage rate. Refer to the lecture handouts to review the definition of yield to maturity.

   The yield to maturity is the discount rate that makes the present value of the bond's cash flows equal to its price.

9942.85 = 10000/(1+r)

Solving for r = 0.5748%

Note however this is the rate of return for the 81-day period.

The yield to maturity is expressed as an annual percentage rate.

YTM = 0.5748 x (360/81) = 2.55%

5. Which of these securities is considered risk free?

    a) Apple stock
    No. Stock is an example of equity instrument.
    b) Emerging market debt
    No. Emerging market debt is not considered risk-free.
    c) U.S. Treasury bills
    Yes. U.S. Treasury bills are backed by the U.S. government and are as close as what we think of risk-free.
    d) Commercial paper
    No. Commercial paper is not considered risk-free.

    Answer:

    The correct answer is **c**.

6. Which of the following is not a distinguishing feature of municipal bonds?

    a) Municipal bonds are issued by state and local governments.
    Yes. Municipal bonds are issued by state and local governments typically issued to finance particular projects.
    b) Municipal bonds have tax-exempt status.
    Yes. Interest income on munis is exempt from federal income taxation. The interest is also exempt from state and local taxes in the issuing state.
    c) Munis are an example of money market instruments.
    No, this is not correct. Municipal bonds are not a type of money market instruments. Money market securities are very short term debt obligations.
    d) Investors typically accept a lower yield on these securities.
    Yes. Because they pay neither federal nor state taxes on the interest income, investors accept a lower yield on municipal bonds.

    Answer:

    The correct answer is **c**.

7. Assume you have a 1-year investment horizon and trying to choose among three bonds. All have the same degree of default risk and mature in 10 years. Which of the following bonds would you choose if you expect the yields to go down to 7 percent one year from now after the coupon payment and want to maximize your 1-year return?

   a) A 9% annual coupon bond currently priced to yield 8%

      No, this is not the highest return. Your one-year return will be determined by the new bond price one year later plus the coupon (if any) and what you pay for they bond today. Find current bond price, the new bond price one year later. Your one-year return is equal to:

      r = ((new bond price + coupon if any)/bond price today) – 1

   b) A zero-coupon bond currently priced to yield 8%

      Yes. Your one-year return will be determined by the new bond price one year later plus the coupon (if any) and what you pay for they bond today.

      Find current bond price, the new bond price one year later. Your one-year return is equal to:

      r = ((new bond price + coupon if any)/bond price today) - 1

      The current price of this bond is $463.193. When the yield goes down to 7%, the bond price will be $543.93. So you can solve for your one-year return as

      493.193 = 543.93/(1+r)

      r = 17.431%

   c) A 6% coupon bond currently priced to yield 8%

      No. Your one-year return will be determined by the new bond price one year later plus the coupon (if any) and what you pay for they bond today.Find current bond price, the new bond price one year later. Your one-year return is equal to:

      r = ((new bond price + coupon if any)/bond price today) - 1

   Answer:

   The correct answer is **b**.

8. Which of the following is correct?

a) When bonds are subject to potential default, the stated yield to maturity is the minimum possible yield that can be realized by the bondholder.
No. When bonds are subject to potential default, the stated yield to maturity is the maximum possible yield that can be realized by the bondholder.
b) In the event of default, bondholders always get their promised payments.
No. In the event of default, bondholders may not get their promised payments.
c) To compensate bond investors for default risk, bonds must offer default premiums, that is, a yield higher than those offered by default-free government securities.
Yes, A higher yield than the risk-free rate compensates investors for default risk.
d) Junk bonds or high-yield bonds have on average lower default risk than investment grade bonds.
No. Junk bonds have higher default risk and that is why they typically have higher yields.

Answer:

The correct answer is **c**.

9. A bond with a call feature

a) Is attractive because there is less default risk.
No. The call feature does not affect the default risk of the bond.
b) Is more likely to be called when interest rates are high because the interest savings will be greater.
No. A callable bond is more likely to be called when interest rates are lower because the interest savings will be grater.
c) Will usually have a higher yield to maturity than a similar noncallable bond.
Yes. The option to call the bond is valuable to the firm. To compensate investors, callable bonds are issued with higher coupons and primed yields to maturity than noncallable bonds.
d) None of the above.

Answer:

The correct answer is **c**.

10. Which security has a higher effective annual rate?

a) A Treasury bill with 89 days left to maturity selling at $97,660 with par value $100,000
No. This is the not the highest. First, find the 89-day return and then find the effective annualized rate assuming that it compounds every 89 days in the year.

b) A coupon bond selling at par and paying 10% coupon quarterly.

Yes. Since the bond is selling at par, the yield to maturity is equal to the annual coupon rate. That is, the YTM = 10%.

Therefore, the effective annual rate = $(1 + 10\%/4)^4 - 1 = 10.38\%$

Answer:

The correct answer is **b**.