Universidad de Barcelona

3rd course: Finance I **_Professor: Altina Sebastián González_**

Exercises 4: External financing: long-term debt

MULTIPLE CHOICE QUESTIONS

1. You have rented a flat but dream of having your own home. You pay a monthly rent of 760 € for the two-room flat.
   Would it be worthwhile taking out a loan to buy a home of your own and repay the loan rather than paying a rent? You have EUR 30,000 in savings. You could buy a similar flat by about EUR 170,000.
   How large a loan you could repay in 10 years when the annual interest rate on the loan is 5% and you are able to use EUR 700 monthly for loan servicing.
   a. 65,996.94€
   b. 85,566.22€
   c. 110,345.90€
   d. 170,156.66€

2. If in the previous problem the bank loan is extended up to 20 years, how much would you be able to borrow
   a. 100,458.55€
   b. 106,067.71€
   c. 112,675.67€
   d. 139,453.33€

3. Suppose a firm sets aside assets to protect particular investors. These assets are called
   a. repurchased shares
   b. senior debt
   c. subordinated debt
   d. collateral

4. As a provider of funds to a corporation, owning which of the following corporate securities will give you the most control rights?
   a. Short-term bank loan
   b. Long-term bond
   c. Preferred stock
   d. Common stock

5. A corporate bond that can be exchanged for a fixed number of shares of stock is called
   a. a callable bond
   b. a debenture
   c. a convertible bond
   d. a warrant

6. Long-term bonds that are unsecured obligations of a company are called
   a. indentures
   b. debentures
   c. mortgage bonds
   d. bearer bonds

7. If a bond is junior or subordinated, it
   a. has a higher priority status than specified creditors
   b. has been issued because the company is in default
   c. must give preference to senior creditors in the event of default
   d. is secondary to equity

8. Which of the following instruments gives the owner the right to purchase securities directly from the firm at a fixed price during a specified period of time?
   a. Warrant
   b. Treasury stock
   c. Subordinated debt
   d. Short-term bank loan

9. The Alfa Co. has a 6 percent coupon bond outstanding that pays semiannual interest. Calculate the semiannual interest payment on a $1,000 face value bond.
   a. $60
   b. $30
   c. $10
   d. $6

10. The Alfa Co. has a 6 percent coupon bond outstanding that pays annual interest. Calculate the annual interest payment on a $1,000 face value bond.
   a. $60
   b. $30
   c. $10
   d. 120

11. Corporations often have the right to repurchase a debt issue prior to maturity at a fixed price. Such debt issues are said to be
   a. indentured
   b. protected
   c. convertible
   d. callable

12. If a corporate security can be exchanged for a fixed number of shares of stock, the security is said to be
   a. Callable
   b. convertible
   c. protected
   d. None of the options are correct

13. A $1,000 face value bond can be exchanged any time for 25 shares of stock. Then the conversion price is
    a. $40
    b. $25
    c. $100
    d. $975

14. The holder of a $1,000 face value bond can exchange the bond any time for 25 shares of stock. Then the conversion ratio
    a. is 40
    b. is 25
    c. is 100
    d. depends on the current market price of the bond

15. Which of the following sentences is true?
    a. A credit rating agency (S&P, Moody’s, Fitch) assess the creditworthiness of share issuers
    b. A premium bond trades below issuance price
    c. Shares (=stocks) are a variable income security
    d. Bonds are not exposed to market risk because they are a fixed income security

16. Which of the following sentences is false?
    a. Debt doesn’t dilute ownership power
    b. Dividends are tax deductible
    c. Depreciation is a non-cash expense
    d. Debt is less expensive than debt

17. The holders of ZZZ Corporation's bonds with a face value of $1,000 can exchange that bond for 35 shares of stock. The stock is selling for $25. What is the conversion value of the bond?
    a. $1,000
    b. $875
    c. $1,200
    d. $965

18. The holders of ZZZ Corporation's bonds with a face value of $1,000 can exchange that bond for 35 shares of stock. The stock is selling for $25. What is the conversion price?
    a. $35
    b. $7.70
    c. $28.57
    d. $975

19. A convertible bond issue can be thought of as the
    a. sale of a straight bond
    b. sale of a straight bond and a call option
    c. sale of a put option
    d. sale of common stock

20. A convertible bond is selling for $993. It has 15 years to maturity, $1,000 face value, and pays 8 percent coupon interest payments annually. Similar straight bonds (nonconvertible) are priced to yield 8,5 percent. The conversion ratio is 20. The stock is currently selling for $45. Calculate the convertible bond's option value.
    a. $34.52
    b. $93
    c. $7
    d. $58.48

PROBLEMS:

1. A woman borrows $18,000 to buy a new car. She pays 5.4% compounded monthly for five years.
    a. What is the size of her monthly payment?
    b. How much interest will she pay?
    c. Find the annual percentage rate.
    d. Prepare an amortization table.
    e. Create a line graph illustrating the decline in the balance due.

2. One retailer charges 1.048€ for a certain computer. A firm of tax accountants buys 8 of these computers and makes a down payment of 1.200€ and agrees to amortize the balance with monthly payments at 12% compounded monthly for 4 years. Construct the amortization schedule and calculate the cost of the loan.

3. The Surplus Value Company had $10 million dollars (face value) of convertible bonds outstanding in 2015. Each bond has the following features
    Face Value: $1.000
    Conversion Price: $25
    Current Call Price: 105 (percent of face value)
    Current Trading Price: 130 (percent of face value)
    Maturity: 2022
    Current stock price: $30
    Coupon rate: 10%
    a. What is the bond's conversion value?
    b. Can you explain why the bond is selling above conversion value?
    c. Should Surplus call? What will happen if it does so?

4. Company ABC decides to borrow $10 million in the bond market. The bond's coupon rate is 8%. Company analysts believe interest rates will go down during the 7 year term of the bonds. To take advantage of lower rates in the future, ABC issues callable bonds.
    Under the terms of the bonds, ABC has the option to call the bonds (meaning, pay them back) any time after year 3. However, if ABC decides to exercise its right to call, it needs to pay bondholders $102 for every $100 of principal.
    Suppose that in year 4, interest rates fall to 6%. ABC exercises its right to redeem the bonds. It borrows money from a bank at 6% and pays back the 8% bonds.
    Do you think that ABC decision of issuing a callable is advantageous for the company?

5. A 26-week T-Bill is purchased for $9,650 and matures at $10,000. What is its yield?

6. Imagine that you have the choices between a one-year zero-coupon bond with a face value of $1,000, which can be purchased for $952.38 or a one-year 5% semi-annual coupon bond trading at its face value of $1,000. Which one would you choose?

7. How much would you be willing to pay for a zero-coupon bond which is amortized at par, has a $1,000 face value, matures in three years, and offers a return of 10% per year