

Chapter 13 Financial Instruments: Long-Term Debt

Student: _____

1. The carrying value of a bond from the issuing corporation's standpoint will always move closer to its face value, regardless of whether the bond is issued at a premium or a discount.

True False

2. Under the effective interest method, interest expense is calculated by multiplying the market interest rate by the carrying value of the bonds.

True False

3. Assume that a company issues bonds at a discount. Under the effective interest method, the company will record progressively less interest expense with the passage of time.

True False

4. Transaction costs are usually included in the carrying value of financial liabilities.

True False

5. When the market rate exceeds the stated or nominal rate, a bond's carrying value will be less than its fair value.

True False

6. The stated rate of interest is the interest rate used to determine the amount of cash interest that will be paid on the principal.

True False

7. A short-term payable may be the current portion of a long-term liability, which arises when the next payment on such a debt will be made out of current assets.

True False

8. Interest may be recognized on a note even though the note does not explicitly state an interest rate.

True False

9. The principal amount of a debt is the cash or cash equivalent amount borrowed.

True False

10. Use of the effective interest method for amortizing bond premiums and discounts is mandatory under IFRS but not under ASPE.

True False

11. Borrowing costs can only be capitalized on non-financial assets.

True False

12. The cost of any equity financing is included when calculating the cost of generalized borrowings.

True False

13. Bonds are said to be redeemable when they can be prematurely retired at the discretion of the issuing company and retractable when they can be prematurely retired at the investor's discretion.

True False

14. When the maturity date of a bond issue is within one year or the operating cycle (whichever is longer) of the current balance sheet date, the bond liability should be reclassified as a current liability (assuming the payment will be made out of current assets).

True False

15. Callable bonds are callable at the option of the investor.

True False

16. A \$1,000, 6%, 10-year bond purchased as a long-term investment at an effective rate at 7%, will pay the investor \$70 cash interest each year.

True False

17. The amortization of a bond discount or premium over the life of a bond will be the same under both the straight line and effective interest methods.

True False

18. In-substance defeasance means that a debtor irrevocably places cash or other monetary assets in a trust fund to pay interest on an outstanding debt. In such situations, the debt is always recorded as paid when the trust fund is set up (i.e. removed from the books).

True False

19. Hedging is one method of minimizing foreign exchange risk.

True False

20. The present value of any bond payable issued between interest-payment dates will include any interest accrued since the last interest payment date.

True False

21. Debt issue costs on long-term debt are expensed upon issue.

True False

22. An increase in interest rates may make bond defeasance more attractive to the issuing corporation.

True False

23. A company issuing shares to comply with its debt covenants for cash would simultaneously decrease (improve) its debt-to-assets and debt-to equity ratios.

True False

24. Bonds payable (due 5 years from the balance sheet date) should be classified as follows:

- A. A contingent liability.
- B. An element of the owners' equity.
- C. A long-term liability.
- D. A current liability.

25. AB sold its 10-year bond at a discount. In reporting the bonds and the related discount on a balance sheet shortly thereafter, the discount should be:

- A. Added to the bonds.
- B. Recorded as expense in the period of sale.
- C. Reported as a deferred charge.
- D. Deducted from the bonds payable.

26. JMR bought 15 Z Corporation's \$1,000 bonds for \$15,270 total, on April 1, 2014, (five years prior to maturity). The bonds pay 8% semi-annual interest on April 1 and October 1. On December 31, 2014, the bonds had a market value of \$14,950 (not a permanent decline). JMR purchased these bonds at:

- A. Par.
- B. Par plus accrued interest.
- C. A premium.
- D. A discount.
- E. A discount plus accrued interest.

27. R Company was indebted to A Inc. at January 1, 2014. The note called for a \$25,000 payment to be made on December 31, 2014 and also on December 31, 2015. The note was non-interest bearing yet 10% was the prevailing rate at the time the note was issued. What is the book value of the note on R's January 1, 2014 balance sheet (rounded)?

A. \$47,727

B. \$47,500

C. \$43,388

D. \$50,000

E. \$38,962

28. \$5,000 (face value) of bonds with a book value of \$4,300 was retired 4 years and 9 months prior to maturity. The dollar amount (excluding interest) paid to retire the bonds was \$4,700. The entry to record the retirement would include:

A. dr. bonds payable \$5,000

B. cr. cash \$4,300

C. dr. bonds payable \$4,700

D. cr. unusual gain \$400

29. ER issued for \$2,060,000, two thousand of its 9%, \$1,000 callable bonds. The bonds are dated January 1, 2019, and mature many years from now. Interest is payable semi-annually on January 1 and July 1. The bonds can be called by the issuer at \$102 on any interest payment date after December 31, 2023. The unamortized bond premium was \$28,000 at December 31, 2021, and the market price of the bonds was \$99 on this date. In its December 31, 2021, balance sheet, at what amount should GC report the carrying value of the bonds?

- A. \$1,980,000
- B. \$2,028,000
- C. \$2,032,000
- D. \$2,040,000
- E. Cannot answer; the bond term is not given

30. Gains or losses from the early extinguishment of debt, if material, should be:

- A. recognized in income as ordinary gains and losses or as unusual items.
- B. recognized as an extraordinary item in the period of extinguishment.
- C. amortized over the remaining original life of the extinguished issue.
- D. amortized over the life of the new issue.

31. All of the following are true with respect to sinking funds except:

- A. A sinking fund is a cash fund that is restricted for retiring the debt of a company.
- B. A sinking fund may be handled by a trustee or by the individual company.
- C. A sinking fund may make the investment more attractive to investors.
- D. Once the sinking fund is established, the company has no more responsibility to the debt.

32. The rate of interest specified on the face of the debt is called the:
- A. Effective interest rate.
 - B. Stated interest rate.
 - C. Yield interest rate.
 - D. Market interest rate.
33. The rate of interest used to discount the future cash payments on a debt to the cash equivalent borrowed is least likely to be described by which of the following terms:
- A. Effective interest rate.
 - B. Yield interest rate.
 - C. Stated interest rate.
 - D. Prevailing interest rate.
34. KR issued bonds payable with a face amount of \$200,000 and a maturity date ten years from date of issuance. If the bonds were issued at a premium, this indicated that:
- A. The effective and stated rates of interest were the same.
 - B. The stated rate of interest exceeded the effective rate of interest.
 - C. The stated interest rate and the market interest rate were the same.
 - D. No necessary relationship exists between the two rates.
 - E. The effective rate of interest exceeded the stated interest rate.

35. In theory (disregarding any other marketplace variables) the proceeds from the sale of a bond will be equal to:
- A. The face amount of the bond plus the present value of the interest payments made during the life of the bond discounted at the prevailing market rate of interest.
 - B. The sum of the face amount of the bond and the periodic interest payments.
 - C. The present value of the principal amount due at the end of the life of the bond plus the present value of the interest payments made during the life of the bond, each discounted at the stated rate of interest.
 - D. The present value of the principal amount due at the end of the life of the bond plus the present value of the interest payments made during the life of the bond, each discounted at the prevailing market rate of interest.
36. AB Company issued a \$100,000, 10%, bond at \$99. Therefore, the bond:
- A. was sold at a premium because the stated interest rate was higher than the yield rate.
 - B. sold at a discount because the stated interest rate was lower than the market interest rate.
 - C. sold at a premium because the \$1,000 accrued interest is added to the \$100,000 face amount.
 - D. was sold for \$100,000 less \$1,000 of accrued interest.
37. For bonds payable, the cash interest paid in each interest period is:
- A. The same amount regardless of whether the bond was sold at par, a discount, or a premium.
 - B. Different depending upon the date of sale.
 - C. Not the same amount when the stated and yield interest rates are different.
 - D. Dependent on the initial amount of accrued interest.

38. Straight-line amortization of bond premium or discount:

- A. Can be used as an optional method of amortization in all situations.
- B. Provides the same amounts of interest expense and interest revenue each interest period as the effective interest method.
- C. Provides the same total amount of interest expense and interest revenue as the effective interest method over the life of the bonds.
- D. is appropriate when the bond term is especially long.
- E. is appropriate for deep discount bonds.

39. If a bond was sold at \$108, the stated rate of interest was:

- A. Equal to market rate.
- B. Not related to market rate.
- C. Higher than market rate.
- D. Lower than market rate.

40. Bond A and Bond B both have a maturity value of \$1,000 and pay annual interest of 9%. The market rate of interest is also 9%. Bond A matures in 4 years and Bond B matures in 5 years. Which of the following is correct?

- A. Both bonds sell for more than \$1,000.
- B. Bond A will sell for more than Bond B.
- C. Both bonds sell for the same amount, \$1,000.
- D. Bond B will sell for more than Bond A.
- E. There is not sufficient information to answer the question.

41. Bonds payable should be reported as a long-term liability in the balance sheet of the issuer at:

- A. Current market price.
- B. lower-of-cost-or-market.
- C. Issue price, excluding any accrued interest at purchase date.
- D. Issue price less any unamortized bond premium or plus any unamortized discount.
- E. Issue price plus any unamortized bond premium or less any unamortized discount.

42. When the interest payment dates of a bond are May 31 and November 30, and a bond issue is sold on July 1, the amount of cash received by the issuer will be:

- A. Decreased by accrued interest from July 1 to November 30.
- B. Decreased by accrued interest from May 31 to July 1.
- C. Increased by accrued interest from May 31 to July 1.
- D. Increased by accrued interest from July 1 to November 30.
- E. Unaffected by accrued interest.

43. When the interest payment dates of a bond are May 31 and November 30, and a bond issue is sold on July 1, the price of the bond will be:

- A. Decreased by accrued interest from July 1 to November 30.
- B. Decreased by accrued interest from May 31 to July 1.
- C. Increased by accrued interest from May 31 to July 1.
- D. Increased by accrued interest from July 1 to November 30.
- E. Unaffected by accrued interest.

44. A firm retired a long-term note by in-substance defeasance. This means that:

- A. the creditors have been paid.
- B. the debtor has been released of its legal responsibility for all remaining debt payments.
- C. there is only a remote chance that the debtor will be required to make further payments on the liability.
- D. the debt is shown as an offset against the assets used to retire the debt, in the debtor's balance sheet.
- E. the debtor will continue to recognize interest expense on the debt but will make no more payments.

45. There are two methods for amortizing premiums and discounts on the sale of bonds. The differences between the two methods are:

- A. Both methods charge a constant amount of interest to the financial statements each year; however, the effective interest method charges a larger total amount of interest expense over the life of the bond.
- B. The effective interest method charges a different interest expense each year while the straight-line method results in a constant amount of expense each year.
- C. There are no differences between the two methods.
- D. None of these answers are correct.

46. In-substance defeasance is sometimes used as a method of bond retirement. Choose the correct statement about this practice.
- A. The bonds are legally retired as a result
 - B. The firm may invest in any investment-grade debt security to retire the bonds as long as the investment securities are transferred irrevocably to a trustee
 - C. Neither the assets used to effect the defeasance, nor the bonds themselves, are reported in the balance sheet, even though the bonds remain outstanding
 - D. The process may require the company which issued the bonds to make substantial payments in addition to the investments purchased for the defeasance
47. Which of the following is not one of the conditions that must be met to qualify as extinguishment of debt by in-substance defeasance?
- A. Trust must own monetary assets that are essentially risk free.
 - B. Cash inflows into the trust must approximately coincide with required cash outflows.
 - C. There is a reasonable possibility that the debtor will be called on to make additional payments on the debt.
 - D. The qualifying assets must not be used for trustee fees.
48. The result of an effective interest rate that is higher than the stated rate on a debt security is the:
- A. Carrying value of the debt will decrease each interest period.
 - B. Security will sell at a premium.
 - C. Cash interest paid on each interest date will be changed.
 - D. Dollar amount of interest expense reported on the income statement, assuming the interest method is used, will increase each interest period.

49. Which of the following statements is true?

- A. If a bond is sold "at a discount," the effective interest rate on the bond is lower than the stated interest rate.
- B. If a bond is sold between interest dates, it is necessary to record the interest accrued since the last payment date before sale.
- C. If a bond is sold "at a premium," the effective interest rate on the bond is higher than the stated interest rate.
- D. Bond price of 98 means that the yield rate is 98% of the stated rate.

50. If bonds are issued initially at a discount and the straight-line method of amortization is used for the discount, interest expense in the early years will be:

- A. less than if the interest method is used.
- B. less than the amount of the interest payments.
- C. more than if the interest method is used.
- D. The same as if the interest method is used.

51. VB owes a \$200,000, 8%, five-year note payable dated January 1, 2020. It is the end of year 2020, and instead of making the interest payment now due, VB has made arrangements to pay the debt and the 2020 interest payment in four equal instalments based on the same interest rate. The first payment is to be made on January 1, 2021. The amount of the equal annual payments is (rounded to the nearest dollar):

A. \$54,000

B. \$60,384

C. \$55,912

D. \$65,214

52. On January 1, 2014, ER signed a \$120,000, 10%, three-year, note payable. The proceeds are to be used to purchase a computer and related software for the company. The lending institution advanced proceeds of \$115,800 and took a mortgage on the computer. The note is payable in three equal annual instalments starting on December 31, 2014. The effective interest rate to use for this debt is (rounded to the nearest percent; do not interpolate):

A. 10%.

B. 11%.

C. 12%.

D. 13%.

53. On November 1, 2009, WC purchased CX, 10-year, 7%, bonds with a face value of \$100,000 for \$96,000. The bonds are intended to be held to maturity. An additional \$2,333 was paid for the accrued interest. Interest is payable semi-annually on January 1 and July 1. The bonds mature on July 1, 2016. WC uses the straight-line method of amortization. Ignoring income taxes, the amount of interest revenue reported in WC's 2019 income statement (year-end December 31) as a result of WC's long-term bond investment in CX was:

- A. \$1,267
- B. \$1,167
- C. \$1,120
- D. \$1,067

54. On March 1, 2012, WC issued 10% stated interest rate, 10 year debentures dated January 1, 2012, in the face amount of \$1,000,000, with interest payable on January 1 and July 1. The debentures were sold to yield 12% plus accrued interest. How much should WC debit to cash on March 1, 2012?

- A. \$901,967
- B. \$903,003
- C. \$1,016,667
- D. \$1,033,333
- E. \$902,336

55. On September 1, 2020, ER issued 11%, 10 year bonds dated June 1, 2020, in the face amount of \$140,000, with interest payable July 1 and December 31. The bonds were sold for \$140,000. How much should ER debit to cash on September 1, 2020?

- A. \$140,000
- B. \$142,567
- C. \$147,700
- D. Cannot be determined from the information given

56. Which of the following is true with respect to bond retirement?

- A. If interest rates increase, the issuer can retire bonds at a gain by buying them on the open market.
- B. Gains and losses on bond retirements may be classified as ordinary gains and losses or unusual gains and losses.
- C. On debt retirement all related accounts should be update.
- D. All of these answers are correct.

57. ASPE and IFRS differ in their treatment of long-term Bonds Payable in that:

- A. Under IFRS, exchange gains and losses on short-term debt are recorded in the income statement immediately.
- B. The straight-line method may be used under ASPE but not under IFRS.
- C. ASPE ignores foreign exchanges gains and losses.
- D. IFRS does not account for foreign exchange gains and losses on Bonds Payable.

58. Which of the following is not a required disclosure for Bonds Payable under IFRS?

- A. Interest rate risk.
- B. Credit risk.
- C. Transaction risk.
- D. Liquidity risk.

59. A firm issued a 16%, \$1,000 bond issued and dated Jan. 1/2000 maturing Jan. 1, 2011 paying interest each June 30 and December 31, and yielding 14%. One bond is used for simplicity.

Required:

- (a) Determine the price of the bond
- (b) All Year 2000 entries and balance sheet presentations for the bond after each interest date in Year A. Show the interest method and straight-line methods in parallel fashion.

60. JV issued \$10,000, 10% bonds payable (interest payable annually), which mature at the end of six years from issue date. The effective rate of interest at issue date was 12%. The sale price of the bonds was: \$_____.

61. RX issued \$1,000,000, 10% bonds payable (interest payable annually), which mature at the end of five years from issue date. The effective rate of interest at issuance was 8%. The sale price of the bonds was: \$_____.

62. On January 1, 1999, a company incurred a debt of \$11,663, which is payable in four equal annual instalments of \$3,600, starting on December 31, 1999.

(a) The implicit interest rate is _____% (rounded to the nearest percent).

(b) Give the journal entry to record the second annual payment (on December 31, 2000).

63. X owed a debt dated January 1, 2020, amounting to \$91,330. Arrangements were made to pay the debt in three equal annual instalments, starting on December 31, 2020. The interest is 15% per annum.

(a) Compute the amount of the annual cash payment to be made on each December 31.

Payment \$_____.

(b) Prepare the related debt amortization schedule for the term of the debt.

64. On September 1, 2015, a company signed a \$19,800, one-year, non-interest-bearing note payable and received \$18,000 cash.

(a) What was the yield rate of interest? _____

(b) Give the entry required at September 1, 2015, in the accounts of the company (use the net method).

(c) Give the adjusting entry required at the end of the accounting year for the company (December 31, 2015).

(d) Give the entry required on the due date, August 31, 2016, assuming no reversing entries were made.

65. A company wishes to finance a long-term construction project and in doing so, capitalize the related interest expense. The company requires \$2 million in financing.

The company currently has the following debt and equity items on its December 31st, 2019

Balance Sheet:

Bonds Payable (8%^a, Issue at Par)	\$1,000,000
Unsecured Line of Credit (6%^b)	\$3,000,000
Common Shares (Par Value \$100)	\$1,000,000

There are 10,000 common shares outstanding which pay an annual dividend of \$5 per share. The company can borrow a maximum of \$5 million on its unsecured line of credit.

The company's bank has indicated its willingness to extend an additional credit facility in the amount of \$1.5 million at an annual rate of 5% as of March 31st, Year 6. These amounts remained outstanding throughout Year 6.

On March 1st, Year 6 the company borrowed \$600,000. On April 1st, Year 6, an additional \$1.4 million was wired to the company's account, drawn on its new credit facility.

Determine the amount of interest that the company would be able to capitalize as per IFRS for Year 6.

66. On July 1, 2012, RC sold two of its \$10,000, 9%, bonds payable at an effective interest rate of 8%. Interest is paid each June 30 and the bond matures in six years on June 30, 2018. Round all amounts to the nearest dollar.

(a) What was the amount of the premium \$_____ or discount
\$_____?

(b) The income statement for the accounting year ended December 31, 2012, should report interest expense of, assuming:

(1) Straight-line amortization, \$_____.

(2) Interest-method amortization, \$_____.

67. It is often necessary to compute the book value of a bond issue several years into its term. Rather than compute an amortization schedule for the entire term, it is possible to directly compute the net bond liability at any interest date under either the interest method or straight-line method. Assume that \$100,000 of 8% bonds were issued to yield 10% on January 1, 2010, the bond date. The bonds pay interest each December 31 and are scheduled to mature in ten years. Answer the following questions without producing an amortization schedule.

(a) What is the book value of the bonds on January 1, 2016 if the firm uses the straight-line method.

(b) What is the book value of the bonds on January 1, 2016 if the firm uses the interest (effective interest) method.

68. A firm has two bonds outstanding today, each with: (1) \$1,000 face value, (2) a term of 5 years at issuance, (3) 3 years remaining to maturity, and (4) 10% yield rate at issuance. Bond A is a zero coupon bond; bond B pays 10% annually and just paid interest yesterday. The yield rate today on both bonds is 12%. Which bond has experienced the greatest percentage change in value since issuance?

69. On September 1, 2015, RC sold \$10,000, 6% (payable semi-annually each March 1 and September 1), 10-year bonds dated September 1, 2015, to yield 8%. RC uses straight-line amortization. The accounting period ends December 31.

(a) The sale price of the bond was \$_____.

(b) Interest expense for 2015, was \$_____.

70. On January 1, 2000, a company purchased a machine (an operational asset) with a list price of \$4,000. \$2,000 was paid in cash and a three-year, noninterest-bearing note was signed. The note was for \$3,000 and required payment of equal amounts of \$1,000 each December 31, 2000, 2001, and 2002. The going rate of interest was 12%. Using this information, complete the following requirements.

(a) Give the entry on January 1, 2000, to record the purchase of the machine (show computations and round to the nearest dollar):

(b) Prepare the related debt amortization schedule.

(c) Give any adjusting entry related to the note payable required for 2001, assuming the accounting period ends March 31. If none is required, state the reason.

(d) Assuming that the accounting period ends March 31 and there were no reversing entries, give the entry to record the annual payment made on December 31, 2001.

71. AB owes a \$100,000, 8%, five-year note payable dated January 1, 2020. It is the end of year 2020, and instead of making the interest payment now due, AB has made arrangements to pay the debt and the 2020 interest payment, in four equal instalments based on the same interest rate. The first payment is to be made on January 1, 2021. The amount of the equal annual payments, rounded to the nearest dollar, is:

72. The management of PT authorized an issue of \$120,000 bonds payable, 6% (annual interest rate), dated January 1, 2000. The bonds mature on December 31, 2015 (5 years). Interest is payable each June 30 and December 31. The bonds were sold on May 1, 2010, at an effective (yield) rate of 8%.

(a) The bonds were sold at a _____ premium; _____ discount (check one).

(b) Give the entry for PT to record the sale of the bonds on May 1, 2010. Show computations for the issue price.

73. On April 1, 2020, the DEF sold a \$2,000,000 bond issue dated January 1, 2020, to yield 9% per annum to maturity. The bonds were to be outstanding for twenty years from January 1, 2020, and the stated rate of interest was 8%. Interest is paid each January 1.

(a) Give the entry to record the purchase of one-fourth of these bonds as a long-term investment by NOP. Assume effective interest amortization and contra/adjunct accounts.

(b) Give the December 31, 2020, adjusting and closing entries for NOP.

74. In August 2005, Crown Corporation Inc., a calendar-year corporation that records adjusting entries only once per year, issued bonds with the following characteristics:

- a. \$50,000 total face value
- b. 12% nominal rate
- c. 16% yield rate
- d. Interest dates are 1 February, 1 May, 1 August, and 1 November
- e. Bond date is 31 October 2004
- f. Maturity date is 1 November 2009 \$1,000 of bond issue costs were incurred.

Part A: Provide the entries required on 1 August 2007 under the effective interest method of amortization.

Part B: Provide the entries required on 1 August 2007 under the straight line method of amortization.

75. ABC Inc. issued \$10,000,000 worth of bonds on January 1st, 2018. The bonds mature on December 31st, 2027 and carry a coupon rate of 6% payable semi-annually on June 30th and December 31st of each year. A market interest rate of 8% was effective throughout 2018.

Required:

- 1) Were the bonds issued at a premium or a discount?
- 2) Prepare all journal entries required during 2018.
- 3) Assume that on January 1st 2019, ABC decided to retire half of the bonds for \$4,800,000 in cash. Prepare the required journal entry.

76. GHI Inc. issued \$5,000,000 worth of bonds on January 1st, 2018. The bonds mature on December 31st, 2017 and carry a coupon rate of 4% payable semi-annually on June 30th and December 31st of each year. A market interest rate of 6% was effective throughout 2018.

Required:

- 1) Were the bonds issued at a premium or a discount?
- 2) Prepare all journal entries required during 2018.
- 3) Assume that on January 1st 2019, GHI Inc. decided to retire ALL of the bonds for \$5,500,000 in cash. Prepare the required journal entry.

77. ABC Inc. borrowed funds from its bank. Details are as follows.

Four year term loan, U.S. \$500,000

Funds borrowed 1 January 20X6; due 31 December 20X9

Exchange rates:

1 January	20X6	U.S. \$1 = Cdn. \$1.35
31 December	20X6	U.S. \$1 = Cdn. \$1.40
31 December	20X7	U.S. \$1 = Cdn. \$1.42
31 December	20X8	U.S. \$1 = Cdn. \$1.36
31 December	20X9	U.S. \$1 = Cdn. \$1.39

Part A: Based on the above information prepare entries to record receipt of loan proceeds for January 20X6.

Part B: Based on the above information prepare entries to record the adjustment to spot rate for December 20X6.

Part C: Based on the above information prepare entries to record adjustment to spot rate December 20X7

Part D: Based on the above information prepare entries to record adjustment to spot rate December 20X8

Part E: Based on the above information prepare entries to record adjustment to spot rate December 20X9

Part F: Based on the above information prepare entries to record repayment of loan December 20X9

Part G: Based on the above information calculate the total accounting recognition of loss.

78. On March 1, 2002, the Shrivastava Company issued bonds dated January 2, 2002 with the following characteristics:

Face value \$20,000,000

Coupon rate 7.6%

Yield to maturity 8%

Coupon payment dates June 30, Dec. 31

Maturity 15 years

The Shrivastava Company's year-end is December 31.

Required:

a. Assuming the Shrivastava Company uses the effective interest method,

i. Prepare all journal entries relating to this bond issue for the year 2002.

ii. Assume that on July 2, 2008; the company redeems one half of the bond issue on the open market at 98. Prepare the journal entry on July 2, 2008.

b. Repeat the above requirements on the assumption the straight-line method is used.

Chapter 13 Financial Instruments: Long-Term Debt **Key**

1. TRUE

2. TRUE

3. FALSE

4. TRUE

5. TRUE

6. TRUE

7. TRUE

8. TRUE

9. TRUE

10. TRUE

11. TRUE

12. FALSE

13. TRUE

14. TRUE

15. FALSE

16. FALSE

17. TRUE

18. FALSE

19. TRUE

20. FALSE

21. FALSE

22. TRUE

23. TRUE

24. C

25. D

26. C

27. C

28. A

29. B

30. A

31. D

32. B

33. C

34. B

35. D

36. B

37. A

38. C

39. C

40. C

41. E

42. C

43. E

44. C

45. B

46. C

47. C

48. D

49. B

50. C

51. B

52. C

53. B

54. A

55. B

56. D

57. B

58. C

$$(a) \text{ Price} = \$1,000(PV 1, 7\% \text{ @ } 20) (.25842) + \$80(PVA, 7\% \text{ @ } 20)(10.59401) = \$1,105.94$$

59.

(b)	Interest	SL	
	Jan. 1/00	Cash	1,105.94
		(both methods)	Bond premium 105.94
			Bonds payable 1,000.00

Balance sheet disclosure Jan. 1/00 (both methods)

Bonds payable	\$1,000.00	
Bond premium	105.94	
Book value of bonds		\$1,105.94

June 30/00	Interest expense	77.42	74.70
	Bond premium	<u>2.58</u>	<u>5.30</u>
	Cash	80.00	80.00

$$77.42 = \$1,105.94(.07) \quad 5.30 = \$105.94/20$$

Balance sheet disclosure June 30/00

Bonds payable	\$1,000.00	\$1,000.00
Premium	<u>103.36</u>	<u>100.64</u>
Book value of bonds	\$1,103.36	\$1,100.64

Dec. 31 00	Interest expense	77.24	74.70
	Bond premium	<u>2.76</u>	<u>5.30</u>
	Cash	80.00	80.00

$$77.24 = \$1,103.36(.07) \quad 5.30 = \$105.94/20$$

Balance sheet disclosure Dec. 31/00

Bonds payable	\$1,000.00	\$1,000.00
Premium	<u>100.60</u>	<u>95.34</u>
Book value of bonds	\$1,100.60	\$1,095.34

$$\begin{array}{rcl}
 \$10,000 \times PV1, 12\% \text{ @ } 6 & (.50663) & = \quad \$5,066 \\
 \$1,000 \times PVA, 12\% \text{ @ } 6 & (4.11141) & = \quad \underline{4,111} \\
 & & \quad \quad 9,177
 \end{array}$$

60.

$$\begin{array}{rcl}
 \$1,000,000 \times PV1, 8\% \text{ @ } 5 & (.68058) & = \quad \$ 680,580 \\
 \$100,000 \times PVA, 8\% \text{ @ } 5 & (3.99271) & = \quad \underline{399,271} \\
 \text{Total} & & \underline{\underline{\$ 1,079,851}}
 \end{array}$$

61.

62. (a) Implicit interest rate: 9%

$\$11,663 \div \$3,600 = 3.23972$, PVA for $n = 4$ shows 9%

(b) December 31, 2000

Liability	2,780
Interest expense	820
Cash	3,600

<u>Date</u>	<u>Cash</u>	<u>Interest Expense</u>	<u>Principal Reduction</u>	<u>Principal Balance</u>
Jan. 1/99	\$11,663			
Dec. 31/99	\$ 3,600	$\$11,663 \times .09 =$	$\$ 1,050$	$\$3,600 - 1,050 =$
Dec. 31/00	3,600	$9,113 \times .09 =$	820	$3,600 - 820 =$
				2,780 6,333

$$\text{(a)} \$91,330 \div (PVA, 15\% \text{ @ } 3) (2.28323) = \underline{\underline{\$40,000}}$$

63.

(b)

<u>Date</u>	<u>Cash -</u>	<u>Interest Expense (15%)</u>	<u>=</u>	<u>Principal Reduction</u>	<u>Principal Balance</u>
Jan. 1/00					\$91,330
Dec. 31/00	40,000	13,700		26,300	65,030
Dec. 31/01	40,000	9,755		30,245	34,785
Dec. 31/02	40,000	5,218		34,782*	

*\$3 difference due to rounding

64. (a) $\$19,800 - \$18,000 = \$1,800 \div \$18,000 = 10\%$

(b) September 1, 2015

Cash	18,000	
Note payable		18,000

(c) December 31, 2015:

Interest expense ($\$1,800 \times 4/12$)	600	
Note payable		600

(d) August 31, 2016:

Note payable	18,600	
Interest expense ($\$1,800 \times 8/12$)	1,200	
Cash		19,800

65. The company requires \$2 Million. \$500,000 was drawn from the company's unsecured line of credit - a generalized borrowing. The remainder was drawn on the purpose-specific credit facility.

It is necessary to calculate the company's weighted average cost of capital for its general borrowings:

$8\% \times \$1 \text{ million} + 6\% \times 3 \text{ million} = \$260,000 / (\$1 \text{ million} + \$3 \text{ million}) = 6.5\%$.

The amount of interest to be capitalized would be adulated as follows:

Category	Portion of Year	Weighted Avg Borrowings	Capitalized Interest
General	10/12	$\$600,000 \times 10/12 = \$500,000 \times 6.5\%$	\$32,500
Specific	9/12	$\$1.4 \text{ million} \times 9/12 = \$1,050,000 \times 5\%$	\$52,500
Total			\$85,000

Thus, \$85,000 of interest would be capitalized.

The journal entry to reflect the capitalization of interest would be as follows:

Interest Expense	\$85,000	
Construction-in-process		\$85,000

(a) \$20,000 x PV1, 8% _a , 6 (.63017)	\$2,60
\$1,800 x PVA, 8% _a , 6 (4.62288)	8,321
Cost	20,924
Par	<u>20,000</u>
Premium	\$924
	=====

(b) Straight-line amortization: \$823. interest expense

$$1,800 - (\$924 \div 6 \text{ years} = \$154) = \$1,646 \times 6 \text{ } 12 = \$823$$

(2) Interest-method amortization: \$837. interest expense

66. $\$20,924 \times 8\% \times 6 \text{ } 12 = \837

67. (a) Original issue price = $\$100,000(PV1, .10, 10)(.38554) + \$8,000(PVA, .10, 10)(6.14457) = \$87,711$. Original discount = $\$12,289$. At Jan. 1/16, 4 years of term are left so BV = $\$100,000 - .4(\$12,289) = \$95,084$.

(b) BV = $100,000(PV1, .10, 4)(.68301) + \$8,000(PVA, .10, 4)(3.16987) = \$93,660$.

68. Bond A sold for 62: $\$1,000(PV1, .10, 5) (.62092)$.

Bond B sold for 100 as coupon and market rate were the same at issuance.

Market value of Bond A today = 71 = $\$1,000(PV1, .12, 3)(.71178)$.

Market value of Bond B today = 95 = $\$1,000(PV1, .12, 3) (.71178) + \$100(PVA, .12, 3)(2.40183)$

Bond A has increased 15% = $(71 - 62)/62$

Bond B has decreased 5% = $(100 - 95)/100$ (generally the price of zeros is more volatile with interest rate changes)

69. (a)

\$10,000 x PV1, 4% _a , 20 (.45639)	=	\$4,564
\$300 x PVA, 4% _a , 20 (13.59033)	=	<u>4,077</u>
Sale price	=	<u>\$8,641</u>

(b)

\$10,000 x 3% _a x 4/6	=	\$200
\$1,359 x 4/120	=	<u>45</u>
Interest expense	=	<u>245</u>

70. (a)

January 1, 2000:
Machinery 4,402
Cash
Note payable

$$*\$1,000 \times (\text{PVA}, 12\%, 3) (2.40183) = 2,402$$

(b)

Date	Cash	Interest Expense	Principal Reduction	Principal Balance
Jan. 1/00			\$ 2,402	
Dec. 31/00	\$ 1,000	288	712	1,690
Dec. 31/01	1,000	203	797	893
Dec. 31/02	1,000	107	893	-0-

(c) March 31, 2001

Interest expense (\$203 x 3/12)	51	
Interest payable		51
(d) Interest expense (\$203 x 9/12)	152	
Interest payable	51	
Note payable	797	
Cash		1,000

$$71. \$100,000 + (\$100,000 \times .08) = \$108,000 \div 3.57710 (\text{PVAD}, 8\%, 4) = \$30,192$$

72. (a) Discount, because the effective interest rate is higher than the stated rate.

(b) Cash (\$110,807* + \$2,400)	113,207	
Discount on bonds payable (\$120,000 - \$110,807)	9,193	
Interest expense (\$120,000 x 3% x 4/6)		2,400
Bonds payable		120,000

* To compute issue price on May 1:

January 1, 2010:

Principal: \$120,000 x PV1, 4% _a , 10 (.67556)	=	\$81,067
Interest: \$3,600 x PVA, 4% _a , 10 (8.11090)	=	<u>29,199</u>
Total	=	<u>\$110,266</u>

June 30, 2010:

Principal: \$120,000 x PV1, 4% _a , 9 (.70259)	=	\$84,311
Interest: \$3,600 x PVA, 4% _a , 9 (7.43533)	=	<u>26,767</u>
Total	=	<u>\$111,078</u>

Interpolation:

(\$111,078 - \$110,266 = \$812) x 2/6	= \$271.00
(\$111,078 - \$271)	= \$10,807

(a) Investment in bonds ($\$2,000,000 \times 1/4$)	500,000	
Interest revenue ($\$500,000 \times 8\% \times 3/12$)	10,000	
Discount on bond investment		45,420
Cash (See computation below.)		464,580

73.

(b) Interest receivable ($\$500,000 \times 8\%$)	40,000	
Discount on bond investment (892 - 223)	669	
Interest revenue		40,669

Interest revenue ($\$40,669 - \$10,000$)	30,669	
Income summary		30,669

PV @ n = 20; i = 9:

$$\text{Prin. } (500,000 \times .17843 = 89,215) + \text{Int. } (40,000 \times 9.12855 = 365,142) = 454,357$$

PV @ n = 19; i = 9:

$$\text{Prin. } (500,000 \times .19449 = 97,245) + \text{Int. } (40,000 \times 8.95011 = 358,004) = \underline{455,249}$$

Difference 892

$$\text{PV @ Apr. 1 00: } \$454,357 + (892 \times 1.4 = 223) = \underline{454,580}$$

plus accrued interest 10,000

Total Cash Paid 464,580

74. Part A: 1 August 2007 - interest payment date

Interest expense	1,103	
Discount on bonds payable		203
Cash		900
Bond issue expense	35	
Bond issue cost		35

$$\$1,103 = \$27,567 \times 4\%$$

$$\$900 = \$30,000 \times 3\%$$

$$\$35 = (60\% \text{ of issue remaining}) \times (\$1,000/17)$$

Part B:

Interest expense	1,115	
Discount on bonds payable		215
Cash		900
Bond issue expense	35	
Bond issue cost		35

$$\$215 = \$358 \times 60\%$$

75. 1) The bonds were issued at a discount - market rate exceeds nominal (coupon) rate.

2) January 1st, 2018:

Cash	\$8,640,999	
Bond Discount	\$1,359,001	
Bonds Payable		\$10,000,000

June 30th, 2018

Interest Expense	\$345,640	
Bond Discount		\$ 45,640
Cash		\$300,000

Dec 31st, 2018

Interest Expense	\$359,466	
Bond Discount		\$ 59,466
Cash		\$300,000

3)

Bonds Payable	\$5,000,000	
Loss on Bond Disposal	\$ 428,448	
Bond Discount		\$ 628,448
Cash		\$4,800,000

76. 1) The bonds were issued at a premium - market rate is less than nominal (coupon) rate.

2) January 1st, 2008:

Cash	\$5,743,894	
Bond Premium	\$ 743,894	
Bonds Payable	\$5,000,000	

June 30th, 2018

Interest Expense	\$172,317	
Bond Premium	\$ 27,683	
Cash		\$200,000

Dec 31st, 2018

Interest Expense	\$170,509	
Bond Premium	\$ 29,491	
Cash		\$200,000

3)

Bonds Payable	\$5,000,000	
Gain on Bond Disposal		\$ 186,720
Bond Premium	\$ 686,720	
Cash		\$5,500,000

77. Part A:

Cash ($\$500,000 \times 1.35$)	\$675,000	
Long term debt		\$675,000

Part B:

Exchange loss	\$25,000	
Long term debt 500,000($\$1.35 - \1.40)		\$25,000

Part C:

Exchange loss	\$10,000	
Long term debt 500,000($\$1.40 - \1.42)		\$10,000

Part D:

Long term debt 500,000($\$1.42 - \1.36)	\$30,000	
Exchange gain		\$30,000

Part E:

Exchange loss	\$15,000	
Long term debt 500,000($\$1.36 - \1.39)		\$15,000

Part F:

Long term debt 500,000($\$1.40 - \1.42)	\$695,000	
Cash		\$695,000

Part G:

20X6	\$25,000 dr.
20X7	10,000 dr.
20X8	30,000 cr.
20X9	<u>15,000 dr.</u>
Total	\$20,000 dr.

78. N.B: The solution below does not use a separate discount account. The discount is deducted directly from Bonds Payable. Students may also use a separate discount account as per the examples in the text.

a. i. Proceeds received - $N = 30, I = 4, PMT = 760,000, FV = 20,000,000$

Solve for $PV = \$19,308,319$

Accrued interest = $\$760,000 \times 2/6 = \$253,333$

Mar. 1, 2002

Cash	\$19,308,319	
	Bonds payable	\$19,308,319
Cash	253,333	
	Interest expense	253,333

June 30, 2002

Interest expense*	772,333	
Bonds payable	12,333	
	Cash	760,000

* $\$19,308,319 \times 4\%$

Dec. 31, 2002 Interest expense** 772,826

Bonds payable 12,826

Cash 760,000

** $(\$19,308,319 + 12,333) \times 4\%$

$19,320,652 \times 4\%$

ii. Book value of bonds on July 2, 2008 =

$N = 17, I = 4, PMT = 760,000, FV = 20,000,000$

Solve for $PV = \$19,513,373$

Book value of bonds redeemed: $\$19,513,373 \times \frac{1}{2} = \$9,756,687$

July 2, 2008

Bonds payable	9,756,687	
Loss on redemption bonds	43,313	
	Cash	9,800,000

b. i. Mar. 1, 2002

Cash	\$19,308,319	
	Bonds payable	\$19,308,319

Cash 253,333
Interest expense 253,333

June 30, 2002

Interest expense 775,544	
Bonds payable*	15,544
Cash	760,000

* Discount = \$691,681

Monthly amortization = \$691,681/178 months

= \$3,886 × four months = \$15,544

Dec. 31, 2002 Interest expense 783,316

Bonds payable** 23,316

Cash 760,000

** \$3,886 × six months = \$23,316

ii. Book value of bonds on July 2, 2008 =

= \$20,000,000 - (3,886 × 102 months remaining)

= \$20,000,000 - 396,372

= \$19,603,628

Book value of bonds redeemed: \$19,603,628 × ½ = \$9,801,814

July 2, 2008

Bonds payable 9,801,814	
Gain on redemption of bonds	1,814
Cash	9,800,000

Chapter 13 Financial Instruments: Long-Term Debt

Summary

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Source: CMA Entrance Examination Study Manual, 2011, CMA Ontario (Pages 422, 671, 672)	1