CHAPTER 12

QUESTIONS

**1.** The major components included in the FASB’s definition of *liabilities* are as follows:

(a) A liability is a result of *past transactions or events.*

(b) A liability involves a *probable future transfer of assets or services.*

1. A liability is the *obligation of a particular entity.*

All of these components should be present before a liability is recorded. In addition, the amount of the liability must be measurable in order to report it on the balance sheet.

**2. a.** An *executory contract* is one in which performance by both parties is still in the future. Only an exchange of promises is made at the initiation of the contract. Common examples include labor contracts and purchase orders.

**b.** The definition of *liability* states in part that a liability should be the result of a past transaction or event. Similar concepts in previous definitions used by accounting bodies have excluded executory contracts from inclusion as liabilities. However, the accounting methods currently accepted for leases, for example, essentially recognize liabilities before performance by either party to the lease contract. Thus, the FASB apparently does not feel that   
its definition excludes the possibility of recording executory contracts as liabilities.

**3.** *Current liabilities* are claims arising from operations that must be satisfied with current assets within one operating cycle or within one year, whichever is longer. Non-operating cycle claims are classified as current if they must be paid within one year from the balance sheet date.

*Noncurrent liabilities* are liabilities whose liquidation will not require the use of current assets to satisfy the obligation within one year.

**4.** Generally, liabilities should be reported at their net present values rather than at the amounts that eventually will be paid. The use of money involves a cost in the form of interest that should be recognized whether or not such cost is expressly stated under the terms of the debt agreement. A debt of $10,000 due five years from now has a present value less than $10,000, unless interest is charged on the $10,000 at a reasonable rate.

**5.** Some companies include short-term borrowing as a permanent aspect of their overall financing mix. In such a case, the company often intends to renew, or roll over, its short-term loans as they become due. As a result, a short-term loan can take on the nature of a long-term debt because, with the refinancing, the cash payment to satisfy the loan is deferred into the future. As of the date the financial statements are issued, if a company has either already done the refinancing or has a firm agreement with a lender to refinance a short-term loan, the loan is classified in the balance sheet as a long-term liability.

**6.** According to *IAS 1*, for a refinanceable obligation to be classified as long-term the refinancing must take place by the balance sheet date, not the later date when the financial statements are finalized.

**7.** A *line of credit* is a negotiated arrangement with a lender in which the terms are agreed to prior to the need for borrowing. When a company finds itself in need of money, an established line of credit allows the com-pany access to funds immediately without having to go through the credit approval process.

**8.** In reporting long-term debt obligations, the emphasis is on reporting what the real economic value of the obligation is today, not what the total debt payments will be in the future. The sum of the future cash payments to be made on a long-term debt is not a good measure of the actual economic obligation. Because the cash outflows associated with a long-term liability extend far into the future, present value concepts must be used to properly value the liability.

**9.** For each payment, a portion is interest and the remainder is applied to reduce the principal. To compute the amount attributable to principal, the outstanding loan balance is multiplied by the monthly interest rate. The result is the interest portion of the payment. Subtracting this amount from the total payment gives the amount applied to reduce the principal.

**10.** **a.** *Secured bonds* have specific assets pledged as security for the issue. *Unsecured bonds,* frequently referred to as *debenture bonds*, are not protected by the pledge or mortgage of specific assets.

**b.** *Collateral trust bonds* are secured by stocks and bonds owned by the borrowing corporation. There is no specific pledge of property in the case of *debenture bonds,* the issue being secured only by the general credit of the company.

**c.** *Convertible bonds* may be exchanged at the option of the bondholder for other securities of the corporation in accordance with the provisions of the bond contract. *Callable bonds* may be redeemed by the issuing company before maturity at a specified price.

**d.** *Coupon bonds* are not recorded in the name of the owner, and title passes with delivery of the bond. Interest is paid by having the bondholder clip the coupons attached to the bonds and present these for payment on the interest dates. *Registered bonds* call for the registry of the bondholder’s name on the books of the corporation. Transfer of title to these bonds is accomplished by surrender of the old bond certificates to the transfer agent, who records the change in ownership and issues new certificates to the buyer. Interest checks are periodically prepared and mailed to the holders of record.

**e.** *Municipal bonds* are issued by gov-ernmental units, including state, county, and local entities. The proceeds are used to finance expenditures such as school construction, utility lines, and road construction. The bonds normally sell at lower interest rates than do other bonds because of the favorable tax treatment given to the holders of the bonds for the interest received. Because the interest revenue is not taxed by the federal government, these bonds are frequently referred to as *tax-exempt securities*. *Corporate bonds* are issued by corporations as a means of financing their long-term needs. Corporations usually have a choice of raising long-term capital through issuing bonds or stock. Bonds have a fixed interest rate while stock pays its return through declared dividends and price appreciation. The holders of corporate bonds must pay federal income taxes on interest revenue received.

**f.** *Term bonds* mature as a lump sum on a single date. *Serial bonds* mature in installments on various dates.

**11.** The *market rate* of interest is the rate prevailing in the market at the moment. The *stated rate* of interest is the rate printed on the face of the bonds. This is also known as the *contract rate*. The *effective rate* of interest is the same as the market rate at date of issuance (purchase) and is the actual return on the purchase price received by the investor and incurred by the issuer.

The market rate fluctuates during the life of the bonds in accordance with economy-wide changes in expectations about future inflation and with the changing financial condition of the company; the stated rate remains the same. Although the effective rate remains the same for the individual bond investor or the borrowing corporation over the life of the issue, this rate will vary from one bondholder to another when the securities are acquired at different times and prices.

**12.** FASB ASC Section 835-30-35 recommends the use of the effective-interest method of amortization for bond premiums and discounts. Because the effective-interest method adjusts the stated interest rate to the effective rate, it is theoretically more accurate than the straight-line method. It is therefore designated as the preferred method of amortization. The straight-line method may be used if the interim results of using it do not differ materially from the resulting amortization using the effective-interest method. The total amortization will, of course, be the same under either method over the life of the bond.

**13.** Three ways bonds may be retired prior to maturity are as follows:

(a) Bonds may be *redeemed* by purchasing them on the open market or by exercising the call provision if included in the bond indenture.

(b) Bonds may be *converted* or exchanged for other securities.

(c) Bonds may be *refinanced* (sometimes called *refunded*) with the use of proceeds from the sale of a new issue.

Normally, with the early extinguishment of a debt, a gain or loss must be recognized for the difference between the carrying value of the debt security and the amount paid. Before pre-Codification FASB *Statement No. 145*, this gain or loss would have been labeled as an *early extinguishment of debt* and reported as an extraordinary item on the income statement. Now it is typically reported as an ordinary item.

**14.** Callable bonds serve the issuer’s interests because the callability feature enables the issuing corporation to reduce its outstanding indebtedness at any time that it may be convenient or profitable to do so.

**15.** Convertible debt securities generally have the following features:

(a) An interest rate lower than the issuer could establish for nonconvertible debt.

(b) An initial conversion price higher than the market value of the common stock at time of issuance.

(c) A call option retained by the issuer.

These securities raise many questions as to the nature of the securities. Examples of these questions include whether they should be considered debt or equity securities, the valuation of the conversion feature, and the treatment of any gain or loss on conversion.

**16.** Under *IAS 32*, the issuance proceeds are allocated between debt and equity for all convertible debt issues. Under U.S. GAAP, this allocation is done only under certain circumstances such as when the conversion feature is detachable.

**17.** Convertible bonds are securities that may be viewed either as primarily debt or primarily equity. If they are viewed as debt, the conversion from debt to equity could be considered a significant economic event for which any difference between current market price for the securities and their carrying value should be recognized as a gain or loss. For the issuer, this could be viewed as creating a significant difference in the type of ownership being assumed.

On the other hand, if the convertible bonds are considered as primarily equity securities whose market is responsive to the price of common stock, the exchange of one equity security for another could be considered as not a significant exchange, and under the historical cost concept, it should not give rise to any gain or loss.

U.S. GAAP states that if subsequent conversion is at least reasonably possible as of the issuance date, then no gain or loss is recognized upon that subsequent conversion. If subsequent conversion was unex-pected as of the issuance date, the fair   
value of the shares issued on conversion is used to compute a gain or loss on the conversion date.

**18.** *Bond refinancing* or *refunding* means issuing new bonds and applying the proceeds to the retirement of outstanding bonds. This may occur either at the maturity of the old bonds or whenever it may be advantageous to retire old bonds by issuing new bonds with a lower interest rate, a more favorable bond contract, or some other benefit.

**19.** Under the provisions of the fair value option, a company has the option to report, at each balance sheet date, any or all of its financial assets and liabilities at their fair values on the balance sheet date. The resulting unrealized gains and losses are reported in the income statement.

**20.** The FASB stated its reason for allowing the fair value option as follows: “The objective is to improve financial reporting by providing entities with the opportunity to mitigate volatility in reported earnings caused by measuring related assets and liabilities differently without having to apply complex hedge accounting provisions.”

**21.** To prevent companies from using hindsight to selectively enhance reported results using the fair value option, the FASB requires a company to designate whether it is using the fair value option with respect to a financial asset or financial liability when the initial transaction to create the item occurs.

**22.** Avoiding the inclusion of debt on the balance sheet through the use of *off-balance-sheet financing* may allow a company to borrow more than otherwise possible due to debt-limit restrictions. Also, a strong appearance of a company’s financial position usually enables it to borrow at a lower cost. Another possible reason is that companies wish to understate liabilities because inflation has, in effect, understated its assets.

One of the main problems with off-balance-sheet financing is that many investors and lenders aren’t able to see through the off-balance-sheet borrowing tactics and thereby make ill-informed decisions. There is   
also concern that as these methods of financing gain popularity, the amount of total corporate debt is reaching unhealthy proportions.

**23.** If a variable interest entity (VIE) is carefully designed, it can be accounted for as an independent company, and any debt that it incurs will not be reported in the balance sheet of its sponsor.

**24.** Companies will, on occasion, join forces with other companies to share the costs and benefits associated with specifically defined projects. These joint ventures are often developed to share the risks associated with high-risk projects. Because the benefits of these joint ventures are uncertain, companies have the possibility of incurring substantial liabilities with few, if any, assets resulting from their efforts. As a result, as is the case with unconsolidated subsidiaries, a joint venture is carefully structured to ensure that the liabilities of the joint venture are not disclosed in the balance sheets of the companies in the partnership. Often, both joint venture partners account for the joint venture using the equity method; that is, the liabilities of the joint venture are not included in the balance sheets of the partners.

**25.**‡ Troubled debt restructuring occurs when the investor (creditor) is willing to make significant concessions as to the return from the investment in order to avoid making settlement under adverse conditions, such as bankruptcy. This means that if the restructuring involves a significant transaction, the investors (creditors) will almost always report a loss unless they have previously anticipated the loss and have reduced the investment to a value lower than the amount finally determined in the settlement. The issuer will report a gain if the restructuring involves a significant transaction.

**26.**‡ **a.** A bond restructuring involving an *asset swap* usually results in a recognition of a loss on the investor’s books and a gain on the issuer’s books. The market value of the assets swapped usually determines the amount of gain or loss to be recognized. Only if the market value of the retired debt is more clearly determinable would such a value be used.

**b.** A bond restructuring involving an *equity swap* similarly results in recognition of gains or losses because the market value of the equity exchanged for the debt is used to record the transaction. If the market value of the debt is more clearly determinable than the market value of the equity, the value of the debt would be used.

**c.** A bond restructuring involving a *modification of terms* does not result in recognition of a gain for the issuer unless the total amount of future cash to be paid, principal plus interest, is less than the carrying value of the debt. In that case, the difference between the future cash and the carrying value is recognized as a gain. Under this condition, future cash payments are charged to the liability account on the issuer’s books.

‡Relates to Expanded Material.

PRACTICE EXERCISES

PRACTICE 12–1 WORKING CAPITAL

Current assets:

Cash $ 400

Accounts receivable 1,750

Total $2,150

Current liabilities:

Accounts payable $1,100

Accrued wages payable 375

Deferred sales revenue 900

Bonds payable (to be repaid in six months) 1,000

Total $3,375

Working capital = Current assets – Current liabilities = $2,150 – $3,375 = ($1,225)

**PRACTICE 12–2** **CURRENT RATIO**

**See Practice 12–1 solution for totals.**

**Current ratio = Current assets/Current liabilities = $2,150/$3,375 = 0.64**

PRACTICE 12–3 SHORT-TERM OBLIGATIONS EXPECTED TO BE REFINANCED

**Current Liabilities Noncurrent Liabilities**

**Loan A $10,000 $ 0**

**Loan B 15,000 0**

**Loan C 2,500 17,500**

**Total $27,500 $17,500**

PRACTICE 12–4 TOTAL COST OF LINE OF CREDIT

**Credit line commitment fee: $500,000 × 0.0005 × (12/12) = $250**

**Interest: $260,000 × 0.059 × (8/12) = $10,227**

**$10,227 + $250 = $10,477**

PRACTICE 12–5 COMPUTATION OF MONTHLY PAYMENTS

**Business Calculator Keystrokes:**

**PV = $300,000 × (1 – 0.10) = $270,000**

**N = 30 years × 12 = 360**

**I = 7.5%/12 = 0.625%**

**FV = 0 (there is no balloon payment associated with the mortgage)**

**PMT = $1,887.88**

PRACTICE 12–6 PRESENT VALUE OF FUTURE PAYMENTS

**PMT = $1,887.88 (see the solution to Practice 12–5)**

**Business Calculator Keystrokes:**

**N = 30 years × 12 = 360 – 12 payments made = 348 payments remaining**

**I = 7.5%/12 = 0.625%**

**PMT = $1,887.88**

**FV = 0 (no balloon payment is associated with the mortgage)**

**PV = $267,511**

PRACTICE 12–7 MARKET PRICE OF A BOND

**Business Calculator Keystrokes:**

**N = 20 years × 2 = 40**

**I = 12%/2 = 6%**

**PMT = $1,000 × 0.09 × (1/2) = $45**

**FV = $1,000 (the face value is paid at the end of 20 years)**

**PV = $774.31**

PRACTICE 12–8 MARKET PRICE OF A BOND

**Business Calculator Keystrokes:**

**N = 10 years × 2 = 20**

**I = 8%/2 = 4%**

**PMT = $1,000 × 0.13 × (1/2) = $65**

**FV = $1,000 (the face value is paid at the end of 10 years)**

**PV = $1,339.76**

PRACTICE 12–9 ACCOUNTING FOR ISSUANCE OF BONDS

Cash 1,025

Premium on Bonds Payable 25

Bonds Payable 1,000

PRACTICE 12–10 ACCOUNTING FOR ISSUANCE OF BONDS

Cash 920

Discount on Bonds Payable 80

Bonds Payable 1,000

PRACTICE 12–11 BOND ISSUANCE BETWEEN INTEREST DATES

Cash 100,750

Bonds Payable 100,000

Interest Payable [$100,000 × 0.09 × (1/12)] 750

PRACTICE 12–12 STRAIGHT-LINE AMORTIZATION

June 30

Interest Expense 11,147

Discount on Bonds Payable 1,147

Cash [$200,000 × 0.10 × (6/12)] 10,000

Discount on Bonds Payable = ($200,000 – $177,060)/20 = $1,147

December 31

Interest Expense 11,147

Discount on Bonds Payable 1,147

Cash [$200,000 × 0.10 × (6/12)] 10,000

PRACTICE 12–13 EFFECTIVE-INTEREST AMORTIZATION

June 30

Interest Expense ($177,060 × 0.06) 10,623.60

Discount on Bonds Payable 623.60

Cash [$200,000 × 0.10 × (6/12)] 10,000.00

Remaining carrying value of bond: $177,060.00 + $623.60 = $177,683.60

December 31

Interest Expense ($177,683.60 × 0.06) 10,661.02

Discount on Bonds Payable 661.02

Cash [$200,000 × 0.10 × (6/12)] 10,000.00

Remaining carrying value of bond: $177,683.60 + $661.02 = $178,344.62

PRACTICE 12–14 BOND PREMIUMS AND DISCOUNTS ON THE CASH FLOW STATEMENT

|  |  |  |  |
| --- | --- | --- | --- |
| **Income Statement** | | Adjustments | **Statement of**  **Cash Flows** |
| **Sales** | **$42,000** | **$ 0** | **$42,000** |
| **Interest expense** | **(4,650)** | **Subtract Amortization of Bond Premium**  **(350)** | **(5,000)** |
| **Net income** | **$37,350** |  | **$37,000** |

1. Direct Method:

Cash collected from customers $42,000

Cash paid for interest (5,000)

Net cash provided by operating activities $37,000

2. Indirect Method:

Net income $37,350

Less: Amortization of bond premium (350)

Net cash provided by operating activities $37,000

PRACTICE 12–15 MARKET REDEMPTION OF BONDS

1. Bonds Payable 100,000

Loss on Bond Redemption 4,700

Discount on Bonds Payable 2,000

Cash 102,700

2. Bonds Payable 100,000

Premium on Bonds Payable 2,000

Loss on Bond Redemption 700

Cash 102,700

PRACTICE 12–16 ACCOUNTING FOR ISSUANCE OF CONVERTIBLE BONDS

If the conversion feature is accounted for separately, the journal entry is as follows:

Cash 111,000

Premium on Bonds Payable 1,000

Bonds Payable 100,000

Paid-In Capital from Conversion Feature 10,000

If the conversion feature is not accounted for separately, the journal entry is as follows:

Cash 111,000

Premium on Bonds Payable 11,000

Bonds Payable 100,000

PRACTICE 12–17 ACCOUNTING FOR CONVERSION OF CONVERTIBLE BONDS

Bonds Payable 100,000

Loss on Bond Conversion 11,500

Discount on Bonds Payable 1,500

Common Stock, $1 par 2,000

Paid-In Capital in Excess of Par 108,000

Paid-in capital in excess of par = ($55 – $1 par) × 2,000 = $108,000

PRACTICE 12–18 FAIR VALUE OPTION

**1. Both bonds were issued when the market interest rate of 8% was equal to the coupon rate, so the bonds were issued at par of $1,000.**

**Assets Liabilities and Equity**

**Bond B $1,000 Bond X payable $1,000**

**Equity 0**

**2. Business Calculator Keystrokes:**

**Asset: N = 30; I = 13%; PMT = $80; FV = $1,000 → PV = $625**

**Liability: N = 30; I = 11%; PMT = $80; FV = $1,000 → PV = $739**

**Assets Liabilities and Equity**

**Bond B $625 Bond X payable $ 739**

**Equity (114)**

PRACTICE 12–19 DEBT-TO-EQUITY RATIO

**1. “Debt” = All liabilities**

**Debt-to-equity ratio = $130,000/$85,000 = 1.53**

**2. “Debt” = All interest-bearing debt**

**Debt-to-equity ratio = ($12,000 + $93,000)/$85,000 = 1.24**

**3. “Debt” = Long-term, interest-bearing debt**

**Debt-to-equity ratio = $93,000/$85,000 = 1.09**

PRACTICE 12–20 TIMES INTEREST EARNED RATIO

**Times interest earned ratio = Earnings before interest and taxes/Interest expense**

= ($19,000 + $8,200)/$8,200

**= 3.32**

PRACTICE 12–21‡ DEBT RESTRUCTURING: ASSET SWAP

Bonds Payable 100,000

Premium on Bonds Payable 3,000

Interest Payable 6,000

Land 64,000

Gain on Disposal of Land 26,000

Gain on Debt Restructuring 19,000

PRACTICE 12–22‡ DEBT RESTRUCTURING: EQUITY SWAP

Bonds Payable 150,000

Interest Payable 8,000

Discount on Bonds Payable 8,000

Common Stock at Par (20,000 shares × $1) 20,000

Paid-In Capital in Excess of Par ($140,000 – $20,000) 120,000

Gain on Debt Restructuring 10,000

PRACTICE 12–23‡ DEBT RESTRUCTURING: SUBSTANTIAL MODIFICATION

1. Undiscounted sum of payments to be made:

Maturity value $5,000

Annual interest payments (5 × $800) 4,000

Total $9,000

Because this $9,000 amount is less than the carrying value of $10,800 ($10,000 + $800 in accrued interest), the loan modification is classified as “substantial,” and the following journal entry is made:

Interest Payable 800

Loan Payable 10,000

Gain on Restructuring of Debt 1,800

Restructured Debt 9,000

2. Next year’s interest expense:

$0. The implicit interest rate on the loan is now 0% because the terms were modified substantially, necessitating a reduction in carrying value. In a case such as this, there is no interest expense in subsequent years, only a reduction in principal as the loan carrying value is reduced.

‡Relates to Expanded Material.

PRACTICE 12–24‡ DEBT RESTRUCTURING: SLIGHT MODIFICATION

1. Undiscounted sum of payments to be made:

Maturity value $ 8,000

Annual interest payments (5 × $800) 4,000

Total $12,000

Because this $12,000 amount exceeds the carrying value of $10,800 ($10,000 + $800 in accrued interest), the loan modification is classified as “slight,” and no journal entry is made. One might consider making the following reclassification entry:

Interest Payable 800

Loan Payable 10,000

Restructured Debt 10,800

2. Next year’s interest expense

A new “implicit” interest rate on the loan must be computed, as follows. [*Note:* For a review of the computation of implicit interest rates (internal rates of return), refer to the Time Value of Money Review module.]

Business Calculator Keystrokes:

PV = –$10,800 (this is the new carrying value of the loan; enter as a negative number)

PMT = $0 (no annual payments will be made)

FV = $12,000

N = 4 (the total loan term is 5 years; 1 year has elapsed already)

I = ???; the solution is 2.67%.

Next year’s interest expense = $10,800 × 0.0267 = $288.36

‡Relates to Expanded Material.

EXERCISES

12–25.

1. Feb. 1, 2015 Interest expense: $750,000 × 0.08 × 1/12 = $5,000.00

Reduction to principal: $5,503.23 – $5,000.00 = $503.23

Mar. 1, 2015 Interest expense: ($750,000 – $503.23) × 0.08 × 1/12 = $4,996.65

Reduction to principal: $5,503.23 – $4,996.65 = $506.58

2. Feb. 1, 2015 Interest Expense 5,000.00

Mortgage Payable 503.23

Cash 5,503.23

12–26.

**1. Monthly Principal Interest**

**Month Payment Paid Paid Balance**

**$90,000**

**July $ 1,589 $ 689 $ 900 89,311**

**August 1,589 696 893 88,615**

**September 1,589 703 886 87,912**

**October 1,589 710 879 87,202**

#### November 1,589 717 872 86,485

**December 1,589 724 865 85,761**

**Totals $ 9,534 $ 4,239 $ 5,295**

**2. Interest expense of $5,295 will be reported in 2015.**

**3. A mortgage liability of $85,761 ($90,000 – $4,239) will be reported on the balance sheet at the end of 2015.**

12–27. (a) Present value of maturity value:

Maturity value of bonds after 10 years or 20

semiannual periods $1,000,000

Effective interest rate—12% per year, or 6% per

semiannual period:

PVn = $1,000,000(Table II )

= $1,000,000(0.3118)

= $311,800

or with a business calculator:

FV = $1,000,000; N = 20; I = 6% → PV = $311,805

12–27. (Continued)

Present value of 20 interest payments:

Semiannual payment, 5% of $1,000,000 $ 50,000

Effective interest rate—12% per year, or 6% per

semiannual period:

PVn = $50,000(Table IV )

= $50,000(11.4699)

= $573,495

or with a business calculator:

PMT = $50,000; N = 20; I = 6% → PV = $573,496

Market price: $311,800 + $573,495 = $885,295

(b) Present value of maturity value:

Maturity value of bonds after five years or 10

semiannual periods $200,000

Effective interest rate—8% per year, or 4% per

semiannual period:

PVn = $200,000(Table II )

= $200,000(0.6756)

= $135,120

or with a business calculator:

FV = $200,000; N = 10; I = 4% → PV = $135,113

Present value of 10 interest payments:

Semiannual payment, 4.5% of $200,000 $ 9,000

Effective interest rate—8% per year, or 4% per

semiannual period:

PVn = $9,000(Table IV )

= $9,000(8.1109)

= $72,998

or with a business calculator:

PMT = $9,000; N = 10; I = 4% → PV = $72,998

Market price: $135,120 + $72,998 = $208,118

12–27. (Concluded)

(c) Present value of maturity value:

Maturity value of bonds after 12½ years or 25

semiannual periods $150,000

Effective interest rate—10% per year, or 5% per

semiannual period:

PVn = $150,000(Table II )

= $150,000(0.2953)

= $44,295

or with a business calculator:

FV = $150,000; N = 25; I = 5% → PV = $44,295

Present value of 25 interest payments:

Semiannual payment, 4% of $150,000 $ 6,000

Effective interest rate—10% per year, or 5% per

semiannual period:

PVn = $6,000(Table IV )

= $6,000(14.0939)

= $84,563

or with a business calculator:

PMT = $6,000; N = 25; I = 5% → PV = $84,564

Market price: $44,295 + $84,563 = $128,858

12–28. (a) Pop-up’s bonds sold at a premium because the stated rate of interest was above the market rate at the issuance date.

(b) Splendor’s bonds sold at a discount. They sold at an interest rate that had a yield above the stated rate.

(c) Cards’ bonds sold at a discount because the contract rate was below the effective rate.

(d) Floppy’s bonds sold at a premium because the stated rate was above the market rate at the date of issuance.

(e) Cintron’s bonds sold at par because the contract and effective rates were the same at the date of issuance.

12–29. (a) Because the market rate equals the stated rate, the face value of the bond will equal the market value of the bond. In this case, a bond issuance with a face value of $90 million will result in cash to George’s of $90 million. The associated journal entry would be

Cash 90,000,000

Bonds Payable 90,000,000

12–29. (Concluded)

(b) Because this zero-coupon bond has no interest annuity associated with it, students must use only Table II to determine the face value of the bond issuance. Using the column associated with an interest rate of 7% (assuming that the market interest rate is still 14% compounded semiannually) and the row associated with 20 periods results in a factor of 0.2584. Using this factor to determine the face value of the required bond issuance results in a face value computed as follows:

$90,000,000 ÷ 0.2584 = $348,297,214

or with a business calculator:

PV = $90,000,000; N = 20; I = 7% → FV = $348,271,602

Thus, to receive proceeds from the bond sale of $90,000,000, George’s would have to issue zero-coupon bonds with a face value of approximately $348,297,214. The related journal entry would be

Cash 90,000,000

Discount on Bonds Payable 258,297,214

Bonds Payable 348,297,214

12–30. (1) 2014

Jan. 1 Cash 510,000

Bonds Payable 500,000

Premium on Bonds Payable 10,000

*To record sale of $500,000, 10%,*

*10-year bonds at 102.*

(2) 2014

July 1 Interest Expense 24,500

Premium on Bonds Payable ($10,000 ÷ 10

years × 6/12) 500

Cash ($500,000 × 0.10 × 6/12) 25,000

*To record interest paid and premium*

*amortization for six months.*

Dec. 31 Interest Expense. 24,500

Premium on Bonds Payable 500

Interest Payable 25,000

*To record accrued interest and*

*premium amortization for six months.*

12–30. (Concluded)

(3) 2015

Apr. 1 Premium on Bonds Payable 25\*

Interest Expense 25

*To record premium amortization*

*on 50 bonds for three months.*

\*Premium amortization = 1/1 thru 4/1 on bonds retired

($50,000 ÷ $500,000 × 3/120 × $10,000 = $25)

Interest Expense ($50,000 × 0.10 × 3/12) 1,250\*

Interest Payable 1,250

*To record interest on 50 bonds for*

*three months.*

Bonds Payable 50,000

Interest Payable 1,250

Premium on Bonds Payable 875\*

Cash 50,250\*\*

Gain on Bond Redemption. 1,875†

\*Unamortized premium written off (105 months early):

$50,000 ÷ $500,000 × 105/120 × $10,000 = $875

\*\*Cash paid:

$50,000 × 0.98 = $49,000 + $1,250 Accrued interest =

$50,250

†Gain on bond reacquisition:

Carrying value ($50,000 + $875) – Amount paid ($49,000) =

$1,875

(4) 2015

July 1 Interest Expense 22,050

Premium on Bonds Payable

($9,000 ÷ 10 years × 6/12) 450

Cash ($450,000 × 0.10 × 6/12) 22,500

*To record interest paid and premium*

*amortization for six months for the*

*remaining bonds $450,000 out of*

*$500,000, or 90%.*

Dec. 31 Interest Expense. 22,050

Premium on Bonds Payable 450

Interest Payable 22,500

*To record accrued interest and   
premium amortization for six months  
for the remaining bonds.*

12–31. (1) Straight-Line Method:

The amount of discount amortized under the straight-line method is the same for all years: $6,500 discount × 12/120 = $650.

(2) Effective-Interest Method:

2014

July 1 Interest amount based on effective rate

($93,500 × 0.045) $4,208

Interest payment based on stated rate

($100,000 × 0.04) 4,000

Difference between interest amount based on

effective rate and stated rate $ 208

Interest Expense 4,208

Discount on Bonds Payable 208

Cash 4,000

Dec. 31 Interest amount based on effective rate

($93,708 × 0.045) $ 4,217

Interest payment based on stated rate

($100,000 × 0.04) 4,000

Difference between interest amount based on

effective rate and stated rate $ 217

Interest Expense 4,217

Discount on Bonds Payable 217

Cash 4,000

2015

July 1 Interest amount based on effective rate

($93,925 × 0.045) $ 4,227

Interest payment based on stated rate

($100,000 × 0.04) 4,000

Difference between interest amount based on

effective rate and stated rate $ 227

Interest Expense 4,227

Discount on Bonds Payable 227

Cash 4,000

Dec. 31 Interest amount based on effective rate

($94,152 × 0.045) $ 4,237

Interest payment based on stated rate

($100,000 × 0.04) 4,000

Difference between interest amount based on

effective rate and stated rate $ 237

Interest Expense 4,237

Discount on Bonds Payable 237

Cash 4,000

12–32. 1. Investor’s Books:

a. Cash 5,600

Bond Investment—DS School District 380\*

Interest Revenue 5,980

\*Discount amortization:

Discount: $140,000 – $128,598 = $11,402

($11,402 ÷ 15) × 6/12 = $380

Cash 5,600

Bond Investment—DS School District 380

Interest Revenue 5,980

b. Cash 5,600

Bond Investment—DS School District 187\*

Interest Revenue 5,787

\*Discount amortization:

$128,598 × 0.045 = $5,787 (interest using effective rate)

$5,787 – $5,600 = $187

Cash 5,600

Bond Investment—DS School District 195\*

Interest Revenue 5,795

\*Discount amortization:

$128,598 + $187 = $128,785

$128,785 × 0.045 = $5,795

$5,795 – $5,600 = $195

2. Issuer’s Books:

a. Interest Expense. 5,980

Cash 5,600

Discount on Bonds Payable 380

Interest Expense 5,980

Cash 5,600

Discount on Bonds Payable 380

b. Interest Expense 5,787

Cash 5,600

Discount on Bonds Payable 187

Interest Expense 5,795

Cash 5,600

Discount on Bonds Payable 195

12–33. 1. a. Interest Expense 25,038

Discount on Bonds Payable 7,538\*

Cash 17,500

\*Discount amortization:

$500,000 – $424,624 = $75,376

$75,376 ÷ 10 semiannual interest periods = $7,538 (rounded)

Interest Expense 25,038

Discount on Bonds Payable 7,538

Cash 17,500

b. Interest Expense 23,354

Discount on Bonds Payable 5,854\*

Cash 17,500

\*Discount amortization:

$424,624 × 0.055 = $23,354

$23,354 – $17,500 = $5,854

Interest Expense 23,676

Discount on Bonds Payable 6,176\*

Cash 17,500

\*Discount amortization:

$424,624 + $5,854 = $430,478

$430,478 × 0.055 = $23,676

$23,676 – $17,500 = $6,176

2. Cash 17,500

Bond Investment—Tanzanite Corporation 7,538

Interest Revenue 25,038

Cash 17,500

Bond Investment—Tanzanite Corporation 7,538

Interest Revenue 25,038

3. a. Interest Expense. 13,124

Premium on Bonds Payable 4,376\*

Cash 17,500

\*Premium amortization:

$543,760 – $500,000 = $43,760

$43,760 ÷ 10 = $4,376 (rounded)

Interest Expense 13,124

Premium on Bonds Payable 4,376

Cash 17,500

12–33. (Concluded)

b. Interest Expense 13,594

Premium on Bonds Payable 3,906\*

Cash 17,500

\*Premium amortization:

$543,760 × 0.025 = $13,594 (rounded)

$17,500 – $13,594 = $3,906 (rounded)

Interest Expense. 13,496

Premium on Bonds Payable 4,004\*

Cash 17,500

\*Premium amortization:

$543,760 – $3,906 = $539,854

$539,854 × 0.025 = $13,496 (rounded)

$17,500 – $13,496 = $4,004

12–34. 2015

Feb. 1 Interest Receivable 375

Interest Revenue 375

*To recognize one month’s accrued interest*

*($50,000 × 0.09 × 1/12). (Assumes accrual*

*of four months’ interest on 12/31/2014 and no*

*reversing entry on 1/1/2015.)*

Bond Investment—Oldtown Corp. 47

Interest Revenue 47

*To recognize one month’s amortization of*

*discount ($4,000 × 1/86). (Assumes*

*amortization of discount on 12/31/2014.)*

Cash 50,375

Bond Investment—Oldtown Corp. 47,442\*

Gain on Sale of Bond Investment 1,058†

Interest Receivable ($1,500 from previous

period) 1,875

*To recognize sale of investment at 97*

*plus accrued interest for five months*

*(no reversal at 1/1/2015).*

\*Carrying value of bond investment:

Original cost $ 46,000

Amortization of discount ($4,000 × 31/86) 1,442

$47,442

†Gain on sale:

Sale price $ 48,500

Carrying value 47,442

Gain $ 1,058

12–34. (Concluded)

Alternatively, a single compound entry may be made as follows:

Feb. 1 Cash 50,375

Bond Investment—Oldtown Corp. 47,395

Gain on Sale of Bond Investment 1,058

Interest Revenue 422

Interest Receivable 1,500

12–35.

2015

July 1 Interest Expense ($300,000 × 0.08 × 6/12) 12,000

Cash 12,000

Interest Expense 3,290\*

Discount on Bonds Payable 3,290

\*$278,000 × 0.11 × 6/12 = $15,290; $15,290 – $12,000 = $3,290

Loss on Early Retirement of Bonds 30,710\*

Bonds Payable 300,000

Discount on Bonds Payable ($22,000 – $3,290) 18,710

Cash 312,000

\*$312,000 – ($300,000 – $18,710) = $30,710

12–36.

2015

Apr. 1 Interest Expense ($100,000 × 0.08 × 3/12) 2,000

Interest Payable 2,000

Premium on Bonds Payable 156\*

Interest Expense 156\*

\*$200,000 × 1.05 = $210,000;

$210,000 − $200,000 = $10,000 premium;

$10,000 ÷ 8 = $1,250 amortization per year

$1,250 × 1/2 × 3/12 = $156 amortization on retired bonds for three months

Bonds Payable 100,000

Interest Payable 2,000

Premium on Bonds Payable 4,219\*

Cash 101,000\*\*

Gain on Early Retirement of Bonds 5,219†

\*$8,750 × 1/2 = $4,375; $4,375 – $156 = $4,219

\*\*$99,000 + $2,000 = $101,000

†$100,000 + $4,219 – $99,000 = $5,219

12–37. 1. Bonds Payable 300,000

Loss on Early Retirement of Debt 16,000

Cash 306,000

Discount on Bonds Payable 10,000

*To record the retirement of old debt.*

Cash 300,000

Bonds Payable 300,000

*To record the issue of new debt.*

2. The call premium is $300,000 × 0.02 = $6,000

The semiannual interest savings is (0.06 – 0.05) × $300,000 = $3,000

$6,000 ÷ $3,000 = 2 semiannual periods (one year) before the call

premium is offset by the interest reduction.

12–38.

2014

1. July 1 Cash 927,000

Bonds Payable 900,000

Premium on Bonds Payable 9,000

Interest Payable 18,000\*

*To record sale of bonds at 101 plus*

*accrued interest.*

\*Accrued interest from May 1 to July 1:

$900,000 × 0.12 × 2/12 = $18,000

2014

2. July 1 Cash 927,000

Discount on Bonds Payable 18,000

Bonds Payable 900,000

Paid-In Capital Arising from Bond

Conversion Feature 27,000\*

Interest Payable 18,000

*To record sale of bonds and allocation*

*of sales price.*

\*Total to be received with conversion feature $ 909,000

Less: Estimated bond price in absence of

conversion feature 882,000

Amount identified with conversion feature $ 27,000

12–39.

2015

Aug. 1 Interest Payable 917\*

Cash 917\*

*Payment of accrued interest on*

*conversion.*

Bonds Payable 100,000

Discount on Bonds Payable 847†

Common Stock (500 shares) 500

Paid-In Capital in Excess of Par 98,653

*Conversion of $100,000 of bonds.*

31 Interest Expense 8,321

Discount on Bonds Payable 71\*\*

Interest Payable 8,250§

*Monthly accrual of interest.*

\*$100,000 × 0.11 × 1/12 = $917

†Total discount $ 9,500

Amount amortized ($9,500 × 13/120) (1,029)

Remaining discount $ 8,471

10% converted $ 847

\*\*$9,500 × 1/120 × 0.9 = $71 (rounded)

§$900,000 × 0.11 × 1/12 = $8,250

12–40.

**1. Business Calculator Keystrokes:**

**Asset: N = 10; I = 8%; PMT = $110; FV = $1,000** → **PV = $1,201**

**Liability: N = 10; I = 8%; PMT = $110; FV = $1,000** → **PV = $1,201**

**Assets Liabilities and Equity**

**Miles bond $1,201 Bond payable $1,201**

**Equity 0**

**2. Asset: N = 10; I = 13%; PMT = $110; FV = $1,000** → **PV = $891**

**Liability: N = 10; I = 11%; PMT = $110; FV = $1,000** → **PV = $1,000**

**Assets Liabilities and Equity**

**Miles bond $891 Bond payable $1,000**

**Equity (109)**

12–40. (Concluded)

**3. Asset: N = 10; I = 6%; PMT = $110; FV = $1,000** → **PV = $1,368**

**Liability: N = 10; I = 14%; PMT = $110; FV = $1,000** → **PV = $844**

**Assets Liabilities and Equity**

**Miles bond $1,368 Bond payable $844**

**Equity 524**

**4. Asset: N = 10; I = 14%; PMT = $110; FV = $1,000** → **PV = $844**

**Liability: N = 10; I = 6%; PMT = $110; FV = $1,000** → **PV = $1,368**

**Assets Liabilities and Equity**

**Miles bond $844 Bond payable $1,368**

**Equity (524)**

12–41.‡ McKeon Machine Company Books:

Notes Payable 210,000

Cost of Goods Sold 160,000

Inventory 160,000

Sales 195,000

Gain on Restructuring of Debt 15,000

Alternatively, the asset swap might be recorded as follows:

Notes Payable 210,000

Inventory 160,000

Gain on Restructuring of Debt 50,000

12–42.‡ MedQuest Enterprises Books:

Notes Payable 5,000,000

Preferred Stock—$10 Par 240,000

Paid-In Capital in Excess of Par—Preferred 1,320,000

Common Stock—$1 Par 300,000

Paid-In Capital in Excess of Par—Common 2,700,000

Gain on Restructuring of Debt 440,000

‡Relates to Expanded Material.

12–43.‡ (a) Maturity value of bonds $ 10,000,000

Interest ($10,000,000 × 0.05 × 5 years) 2,500,000

Total payments to be made $ 12,500,000

Because the total payments to be made exceed the carrying value of $11,210,000 ($10,000,000 + $210,000 premium + $500,000 interest + $500,000 interest), no journal entry is required.

(b) Maturity value of bonds $ 7,000,000

Interest ($7,000,000 × 0.10 × 5 years) 3,500,000

Total payments to be made $ 10,500,000

Because the total payments after the restructuring are less than the carrying value of $11,210,000 by $710,000, this amount must be recognized as a gain with the following journal entry:

2015

Jan. 1 Interest Payable 1,000,000

Bonds Payable 10,000,000

Premium on Bonds Payable 210,000

Restructured Debt 10,500,000

Gain on Restructuring of Debt 710,000

(c) Maturity value of bonds $ 8,000,000

Interest ($8,000,000 × 0.06 × 5 years) 2,400,000

Total payments to be made $ 10,400,000

Because the total payments after the restructuring are less than the carrying value of $11,210,000 by $810,000, this amount must be recognized as a gain with the following journal entry:

2015

Jan. 1 Interest Payable 1,000,000

Bonds Payable 10,000,000

Premium on Bonds Payable 210,000

Restructured Debt 10,400,000

Gain on Restructuring of Debt 810,000

‡Relates to Expanded Material.

PROBLEMS

12–44.

**1. a. Current ratio (Current assets/Current liabilities): $80,000/$55,000 = 1.45**

**b. Debt-to-equity ratio (Total liabilities/Total equity): $225,000/$180,000 = 1.25**

**c. Debt ratio (Total liabilities/Total assets): $225,000/$405,000 = 0.56**

**2. First, the existence of the refinancing arrangement should be supported by some formal documentation. Second, if the refinancing occurs before the financial statements are released, the auditor can verify that the actual refinancing has taken place.**

12–45.

**1. Payment Interest Amount Applied to**

**Year Amount Expense Reduce Principal Balance**

**$800,000**

**2015 $ 211,038 $ 80,000 $ 131,038 668,962**

**2016 211,038 66,896 144,142 524,820**

**2017 211,038 52,482 158,556 366,264**

**2018 211,038 36,626 174,412 191,852**

**2019 211,038 19,186 \* 191,852 0**

**Totals $ 1,055,190 $ 255,190 $ 800,000**

**\*Adjusted for rounding.**

**2.**

**2015 2016 2017 2018 2019**

**Equipment $ 800,000 $ 800,000 $ 800,000 $ 800,000 $ 800,000**

**Accumulated depreciation (160,000) (320,000) (480,000) (640,000) (800,000)**

**Book value $ 640,000 $ 480,000 $ 320,000 $ 160,000 $ 0**

**3. The depreciation decreases the book value of the asset in a straight-line   
fashion, whereas the reduction in the principal of the liability changes each year as the carrying value of the liability changes. The liability decreases more in the later years than it does in the early years when more of each payment goes toward the payment of interest.**

12–46.

1. Issuance on Encino’s Books:

Cash 820,744

Discount on Bonds Payable 179,256

Bonds Payable 1,000,000

Deferred Bond Issue Costs 40,000

Cash 40,000

Purchase on SeaRay’s Books:

Bond Investment—Encino Company 820,744

Cash 820,744

2. Encino’s Adjusting Entries, December 31, 2015:

Interest Expense 45,424

Interest Payable ($1,000,000 × 0.08 × 1/2 year) 40,000

Discount on Bonds Payable 5,424 \*

Bond Issue Cost Expense ($40,000 ÷ 10 years) 4,000

Deferred Bond Issue Costs 4,000

SeaRay’s Adjusting Entry, December 31, 2015:

Interest Receivable 40,000

Bond Investment—Encino Company 8,963†

Interest Revenue 48,963

COMPUTATIONS:

Discount

Effective Interest Stated Interest Amortization

\*Jan. 1–June 30 $820,744 × 0.055 = $45,141 $40,000 $5,141

July 1–Dec. 31 $825,885 × 0.055 = 45,424 40,000 5,424

†$179,256 discount ÷ 10 years × 6/12 = $8,963 straight-line amortization.

12–47.

1. Present value of bond maturity value:

Maturity value of bonds after 10 years or 20 semiannual periods: $700,000

Effective interest rate—12% per year, or 6% per semiannual period:

PVn = $700,000 (Table ll )

= $700,000(0.3118)

= $218,260

or with a business calculator:

FV = $700,000; N = 20; I = 6% → PV = $218,263

12–47. (Concluded)

Present value of 20 interest payments:

Semiannual payment, 5% of $700,000 $35,000

Effective interest rate—12% per year, or 6% per semiannual

period:

PVn = $35,000(11.4699)

= $401,447

or with a business calculator:

PMT = $35,000; N = 20; I = 6% → PV = $401,447

Maximum amount investor should pay to earn 12%: $218,260 + $401,447 = $619,707

2. Straight-Line Method:

A B C D

Interest Bond

Received Discount Interest Carrying

Interest (5% of Amortization Revenue Value

Payment Face Value) ($80,293 × 1/20) (A + B) (D + B)

$619,707

1 $35,000 $4,015 $39,015 623,722

2 35,000 4,015 39,015 627,737

Effective-Interest Method:

A B C D

Interest Interest Bond

Received Revenue Discount Carrying

Interest (5% of (6% of Bond Amortization Value

Payment Face Value) Carrying Value) (B – A) (D + C)

$619,707

1 $35,000 $37,182\* $2,182 621,889

2 35,000 37,313† 2,313 624,202

\*0.06 × $619,707 = $37,182

†0.06 × $621,889 = $37,313

The interest revenue recognized each period should be equal to the effective-interest revenue (effective-interest rate × carrying value). This is accomplished by use of the effective-interest method. It is preferred over the straight-line method because it always values the investment at its present value.

12–48.

1. a. Amortization of Premium—Straight-Line Method:

A B C D E

Interest Bond

Received Premium Interest Unamortized Carrying

Interest (3½% of Amortization Revenue Premium Value

Payment Face Value) ($2,626 × 1/10) (A – B) (D – B) (E – B)

$2,626 $32,626

1 $1,050 $263 $787 2,363 32,363

2 1,050 263 787 2,100 32,100

3 1,050 263 787 1,837 31,837

4 1,050 263 787 1,574 31,574

5 1,050 263 787 1,311 31,311

6 1,050 263 787 1,048 31,048

7 1,050 263 787 785 30,785

8 1,050 263 787 522 30,522

9 1,050 263 787 259 30,259

10 1,050 259 791 0 30,000

b. Amortization of Premium—Effective-lnterest Method:

A B C D E

Interest Interest Bond

Received Revenue Premium Unamortized Carrying

Interest (3½% of (2½% of Bond Amort. Premium Value

Payment Face Value) Carrying Value) (A – B) (D – C) (E – C)

$2,626 $32,626

1 $1,050 $816 (0.025 × $32,626) $234 2,392 32,392

2 1,050 810 (0.025 × $32,392) 240 2,152 32,152

3 1,050 804 (0.025 × $32,152) 246 1,906 31,906

4 1,050 798 (0.025 × $31,906) 252 1,654 31,654

5 1,050 791 (0.025 × $31,654) 259 1,395 31,395

6 1,050 785 (0.025 × $31,395) 265 1,130 31,130

7 1,050 778 (0.025 × $31,130) 272 858 30,858

8 1,050 771 (0.025 × $30,858) 279 579 30,579

9 1,050 764 (0.025 × $30,579) 286 293 30,293

10 1,050 757 ($1,050 – $293)\* 293 0 30,000

\*Adjusted for rounding.

12–48. (Concluded)

2. Bray Co. Books:

Bond Investment—Honey Sales Co. 32,626

Cash 32,626

Cash 1,050

Bond Investment—Honey Sales Co. 234

Interest Revenue 816

Cash 1,050

Bond Investment—Honey Sales Co. 240

Interest Revenue 810

Honey Sales Co. Books:

Cash 32,626

Bonds Payable 30,000

Premium on Bonds Payable 2,626

Interest Expense 816

Premium on Bonds Payable 234

Cash 1,050

Interest Expense 810

Premium on Bonds Payable 240

Cash 1,050

12–49.

1. Maturity value, Table ll, n = 20, i = 4% (0.4564 × $100,000) $45,640

or with a business calculator:

FV = $100,000; N = 20; I = 4% → PV = $45,639

Interest payment, Table IV, n = 20, i = 4% 13.5903

n = 10, i = 4% 8.1109

5.4794 × $5,000 27,397

or with a business calculator:

PMT = $5,000; N = 10; I = 4% → PV = $40,554

To discount this deferred annuity back to the present:

FV = $40,554; N = 10; I = 4% → PV = $27,397

Market value $73,037

12–49. (Concluded)

2. Recall that this bond defers interest payments until the sixth year. In doing the present value calculations, allowance must be made for the nonpayment of interest during Years 1 through 5.

A B C D

Bond

Interest Paid Interest Amount Carrying

Interest (5% of Expense Amortized Value

Payment Face Value) (D × 0.04) (B – A) (D + C)

$ 73,037

1 $ 0 $2,921 $2,921 75,958

2 0 3,038 3,038 78,996

3 0 3,160 3,160 82,156

4 0 3,286 3,286 85,442

5 0 3,418 3,418 88,860

6 0 3,554 3,554 92,414

7 0 3,697 3,697 96,111

8 0 3,844 3,844 99,955

9 0 3,998 3,998 103,953

10 0 4,158 4,158 108,111

11 5,000 4,324 (676) 107,435

12 5,000 4,297 (703) 106,732

13 5,000 4,269 (731) 106,001

14 5,000 4,240 (760) 105,241

15 5,000 4,210 (790) 104,451

16 5,000 4,178 (822) 103,629

17 5,000 4,145 (855) 102,774

18 5,000 4,111 (889) 101,885

19 5,000 4,075 (925) 100,960

20 5,000 4,040\* (960) 100,000

\*Rounded.

Note that with this deferred interest bond, the carrying value increased above the face value. When interest payments were made, the amortization causes the carrying value to be reduced to the face value.

12–50.

1. Table ll, n = 20, i = 0.04 (0.4564 × $100,000) $ 45,640

or with a business calculator:

FV = $100,000; N = 20; I = 4% → PV = $45,639

Table IV, n = 20, i = 0.04 (13.5903 × $5,000) 67,952

or with a business calculator:

PMT = $5,000; N = 20; I = 4% → PV = $67,952

Market value (present value) of bond $113,592

2015

Jan. 1 Cash 113,592

Bond Payable 100,000

Premium on Bonds Payable 13,592

2. a. Cash paid for interest = $100,000 × 0.10 = $10,000

b. Premium amortized = $13,592 ÷ 10 years = $1,359

c. Interest expense = $10,000 – $1,359 = $8,641

3. a. Direct Method:

Cash flows from operating activities:

Cash receipts from customers $293,000\*

Cash payments for:

Inventory $172,000†

Interest expense 10,000

Other expenses 82,000 264,000

Net cash provided by operating activities $ 29,000

\*$300,000 + $48,000 – $55,000 = $293,000

†$180,000 + $87,000 – $93,000 + $58,000 – $60,000 = $172,000

b. Indirect Method:

Cash flows from operating activities:

Net income $14,859\*

Adjustments:

Depreciation 14,500

Amortization of bond premium (1,359)

Increase in accounts receivable (7,000)

Decrease in inventory 6,000

Increase in accounts payable 2,000

Net cash provided by operating activities $29,000

\*$120,000 – $8,641 – $14,500 – $82,000 = $14,859

12–50. (Concluded)

**The following table can be used in answering 3, parts (a) and (b):**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Income Statement | **Adjustments** | **Statement of**  **Cash Flows** |
| **Sales** | **$ 300,000** | **– 7,000** | $ 293,000 |
| **Cost of sales** | **(180,000)** | **+ 6,000**  **+ 2,000** | **(172,000)** |
| **Depreciation expense** | **(14,500)** | **+14,500** | **0** |
| **Interest expense** | **(8,641)** | **– 1,359** | **(10,000)** |
| **Other expenses** | **(82,000)** | **No adjustment** | **(82,000)** |
| **Net income** | **$ 14,859** | **$14,141** | **$ 29,000** |

12–51.

1. 2005

July 1 Cash 4,676,800

Discount on Bonds Payable 398,200

Bonds Payable 5,000,000

Interest Payable ($5,000,000 × 0.06 × 3/12) 75,000

2. 2005

Oct. 1 Interest Payable 75,000

Interest Expense 75,000

Cash 150,000

3. 2005

Dec. 31 Interest Expense 85,081

Discount on Bonds Payable

($398,200 × 6/237) 10,081

Interest Payable ($5,000,000 × 0.06 × 3/12) 75,000

4. 2015

Apr. 1 Bonds Payable 700,000

Discount on Bonds Payable 28,227\*

Common Stock (14,000 shares, $1 par) 14,000

Paid-ln Capital in Excess of Par 657,773

\*Unamortized bond discount applicable to converted bonds:

April 1, 2015–April 1, 2025 = 120 months

120/237 × $700,000/$5,000,000 × $398,200 = $28,227

12–51. (Concluded)

5. 2015

July 1 Bonds Payable 600,000

Loss on Bond Reacquisition 143,590\*

Discount on Bonds Payable 23,590†

Cash (600 bonds × $1,200) 720,000

\*Loss on bond reacquisition:

Amount paid on reacquisition (600 × $1,200) $ 720,000

Less: Carrying value of bonds

($600,000 – $23,590) 576,410

$ 143,590

†Unamortized bond discount applicable to reacquired bonds:

July 1, 2015–April 1, 2025 = 117 months

$398,200 × 117/237 × $600,000/$5,000,000 = $23,590 (rounded)

12–52.

1. 2007

Oct. 1 Cash 3,549,683\*

Discount on Bonds Payable 520,317

Bonds Payable 4,000,000

Interest Payable 70,000

\*Bond proceeds $3,479,683

Accrued interest: $4,000,000 × 0.07 × 3/12 70,000

$3,549,683

2. 2007

Dec. 31 Interest Expense 27,780

Interest Payable ($4,000,000 × 0.07 × 1/12) 23,333

Discount on Bonds Payable 4,447\*

\*Monthly accrual entry. Amortization of bond discount:

Life of bond issue: 9¾ years or 117 months

Amortization per month: $520,317 ÷ 117 = $4,447

12–52. (Continued)

3. 2013

July 1 Interest Payable ($4,000,000 × 0.07 × 6/12) 140,000

Cash 140,000

Bonds Payable 1,500,000

Discount on Bonds Payable 80,046\*

Common Stock, $1 par (6,000 shares) 6,000

Paid-ln Capital in Excess of Par 1,413,954†

*Conversion of bonds to stock.*

\*Remaining life of bonds: 48 months

$1,500,000 ÷ $4,000,000 × $4,447 × 48 = $80,046

†Number of shares of common stock issued in exchange for bonds:

$1,500,000 ÷ $1,000 × 4 = 6,000 shares

Carrying value of bonds assigned to shares:

$1,500,000 – $80,046 $1,419,954

Less: Common stock at par: $1 × 6,000 6,000

Paid-in capital in excess of par $1,413,954

4. 2014

Dec. 31 Interest Expense 17,362

Interest Payable ($2,500,000 × 0.07 × 1/12) 14,583

Discount on Bonds Payable 2,779\*

\*Amortization of bond discount for December:

$2,500,000 ÷ $4,000,000 × $4,447 = $2,779

Bonds Payable 1,000,000

Interest Payable 35,000

Loss on Bond Reacquisition 30,853\*\*

Cash 1,032,500\*

Discount on Bonds Payable 33,353†

*Reacquisition of bonds at 99 3/4%.*

\*Amount paid on bond retirement:

Bonds: $1,000,000 × 0.9975 $ 997,500

Accrued interest:

$1,000,000 × 0.07 × 6/12 35,000

Cash paid $ 1,032,500

†Remaining life of bonds: 30 months

$1,000,000 ÷ $4,000,000 × $4,447 × 30 = $33,353

\*\*Loss on bond reacquisition:

Cash paid for bonds: $1,000,000 × 0.9975 $ 997,500

Carrying value of bonds: $1,000,000 – $33,353 966,647

$ 30,853

12–52. (Concluded)

5. 2015

July 1 Interest Payable ($1,500,000 × 0.07 × 6/12) 52,500

Cash 52,500

Cash ($3,000,000 × 0.97) 2,910,000

Discount on Bonds Payable 90,000

Bonds Payable 3,000,000

Bonds Payable 1,500,000

Loss on Bond Retirement 40,023\*

Cash 1,500,000

Discount on Bonds Payable 40,023

\*Loss on bond retirement:

Cash paid for bonds $ 1,500,000

Carrying value of bonds: par value $ 1,500,000

Less bond discount:

$1,500,000 ÷ $4,000,000 × $4,447 × 24

(remaining months—life of issue) 40,023 1,459,977

Loss $ 40,023

**12–53. Chloe Inc.**

**Income before Income Taxes from Bond Investment**

**For Years Ended December 31, 2014 and 2015**

2014 2015

Interest income before amortization $ 42,0001 $ 60,0002

Amortization of bond discount 4,9483 7,6023

Loss on sale of bonds (17,202)4

Income before income taxes $ 46,948 $ 50,400

(*Note*: Chloe is accounting for these bonds as a held-to-maturity investment. See Chapter 14 for more details.)

COMPUTATIONS:

1Interest income before amortization for 2014:

Face value of bonds (800 × $1,000) $ 800,000

Interest rate 9%

Interest for year $ 72,000

Interest received December 1, 2014 ($72,000 × 6/12) $ 36,000

Interest accrued at December 31, 2014 ($72,000 × 1/12) 6,000

Interest income before amortization for 2014 $ 42,000

12–53. (Concluded)

2Interest income before amortization for 2015:

Interest accrued at December 31, 2014, reversed $ (6,000)

Interest received June 1, 2015 (6 months) 36,000

Accrued interest paid by buyer (June 1–November 1—

5/12 × $72,000) 30,000

Interest income before amortization for 2015 $ 60,000

3Amortization of bond discount—effective-interest

method for 2014 and 2015:

Face value of bonds (800 × $1,000) $ 800,000

Purchase price of bonds 731,052

Bond discount $ 68,948

Amortization of bond discount for 2014:

Six months ended December 1, 2014 ($731,052 × 5.5% =

$40,208 effective interest; $40,208 – $36,000 cash

interest) $ 4,208

Month of December, 2014 ($731,052 + $4,208 =

$735,260; $735,260 × 0.055 = $40,439 effective interest;

$40,439 – $36,000 cash interest = $4,439; $4,439 × 1/6) 740 4,948

Balance of unamortized bond discount December 31, 2014 $ 64,000

Amortization of bond discount for 2015:

Five months ended June 1, 2015 ($4,439 – $740) $ 3,699

Five months ended November 1, 2015 ($735,260 + $4,439 =

$739,699; $739,699 × 0.055 = $40,683 effective interest;

$40,683 – $36,000 cash interest = $4,683; $4,683 × 5/6) 3,903 7,602

Balance of unamortized bond discount November 1, 2015 $ 56,398

4Loss on sale of bonds for 2015:

Selling price of bonds:

Selling price of bonds, including accrued interest

paid by buyer $ 756,400

Accrued interest paid by buyer (See note 2) (30,000)

Selling price of bonds $ 726,400

Carrying value of bonds:

Purchase price of bonds $ 731,052

Amortization of bond discount for 2014 (See note 3) 4,948

Amortization of bond discount for 2015 (See note 3) 7,602

Carrying value of bonds at date of sale 743,602

Loss on sale of bonds $ (17,202)

12–54.

2012

May 1 Bond Investment—Horizon Corp. 29,100

Interest Receivable 400

Cash 29,500\*

\*Cost to acquire bonds: $30,000 × 0.97 $29,100

Accrued interest, March 1–May 1:

$30,000 × 0.08 × 2/12 400

$29,500

Sept. 1 Bond Investment—Horizon Corp. 90\*

Cash 1,200

Interest Revenue 890

Interest Receivable 400

\*Amortization: Discount on bonds, $30,000 – $29,100 = $900

Life of bonds for investor, May 1, 2012 to September 1, 2015 = 40 months

Amortization: May 1 to September 1 = 4 months; 4/40 × $900 = $90

Dec. 31 Interest Receivable 800

Interest Revenue ($30,000 × 0.08 × 4/12) 800

Bond Investment—Horizon Corp. 90

Interest Revenue ($22.50 amortization per month ×

4 months) 90

(*Note*: To simplify this problem, it is assumed that Glacier Bay is ignoring year-to-year market value changes in accounting for this bond investment. As discussed in Chapter 14, this is the accounting procedure used when an investment is classified as held to maturity.)

2013

Mar. 1 Bond Investment—Horizon Corp. 45\*

Cash 1,200

Interest Revenue 445

Interest Receivable 800

\*$22.50 amortization per month × 2 months

12–54. (Continued)

2013

May 1 Bond Investment—Horizon Corp. 15\*

Interest Revenue 15

\*Amortization of discount on $10,000 bonds sold:

Mar. 1–May 1: 2/40 × $10,000 ÷ $30,000 × $900 = $15

Cash 10,433

Bond Investment—Horizon Corp. 9,790

Gain on Sale of Bonds 510\*

Interest Revenue 133†

\*Sold $10,000 face value bonds at 103 $10,300

Original cost, $10,000 × 0.97 $9,700

Amortization, 2012, $10,000 ÷ $30,000 × $180 $60

Amortization, 2013, $10,000 ÷ $30,000

× ($22.50 × 4) 30 90

Carrying value of bonds sold 9,790

Gain on sale of bonds $ 510

†Accrued interest, Mar. 1–May 1: $10,000 × 0.08 × 2/12 = $133

Sept. 1 Bond Investment—Horizon Corp. 90\*

Cash 800

Interest Revenue 890

\*Amortization of discount on bonds ($20,000 face value) for 2013:

6/40 × $20,000 ÷ $30,000 × $900 = $90, or $15 per month.

Dec. 31 Interest Receivable 533

Interest Revenue ($20,000 × 0.08 × 4/12) 533

Bond Investment—Horizon Corp. 60

Interest Revenue ($15 per month × 4 months) 60

2014

Mar. 1 Bond Investment—Horizon Corp. 30

Cash 800

Interest Revenue 297

Interest Receivable 533

July 1 Bond Investment—Horizon Corp. 45\*

Interest Revenue 45

\*Amortization of discount on $15,000 bonds exchanged

(March 1–July 1):

4/40 × $15,000 ÷ $30,000 × $900 = $45

12–54. (Concluded)

2014

July 1 Cash 400

Investment in Horizon Corp. Common Stock 18,000

Bond Investment—Horizon Corp. 14,843\*

Gain on Exchange of Bonds 3,157\*

Interest Revenue 400†

\*Received 2,000 shares valued at $9 $18,000

Carrying value of bonds exchanged:

Original cost: $15,000 × 0.97 $14,550

Amortization, 2012: $15,000 ÷ $30,000 × $180 $ 90

Amortization, 2013: $15,000 ÷ $20,000 × $180 135

Amortization for 2014 ($15,000 ÷ $20,000 × $30)

+ $45 68 293

Carrying value of bonds exchanged 14,843

Gain on exchange $ 3,157

†Interest, $15,000 for 4 months (March 1–July 1):

$15,000 × 0.08 × 4/12 = $400

Sept. 1 Bond Investment—Horizon Corp. 23\*

Cash 200

Interest Revenue 223

\*Amortization of discount on bonds, $5,000 for 2014:

6/40 × $5,000 ÷ $30,000 × $900 = $22.50, or $3.75 per month

Dec. 31 Interest Receivable 133

Interest Revenue ($5,000 × 0.08 × 4/12) 133

Bond Investment—Horizon Corp. 15

Interest Revenue ($3.75 per month × 4 months) 15

2015

Mar. 1 Bond Investment—Horizon Corp. 8\*

Cash 200

Interest Revenue 75

Interest Receivable 133

\*Amortization of discount on bonds of $5,000:

($3.75 per month × 2 months)

Sept. 1 Bond Investment—Horizon Corp. 23

Interest Revenue ($3.75 per month × 6 months) 23

Cash 5,200\*

Bond Investment—Horizon Corp. 5,000

Interest Revenue 200

\*Proceeds on bond redemption:

Face value of bonds $5,000

Interest: $5,000 × 0.08 × 6/12 200

Total cash received $5,200

12–55.

Fitzgerald Inc. Books:

2011

Apr. 1 Cash 720,000

Discount on Notes Payable 30,000

Notes Payable 750,000

*Sale of notes to underwriter.*

Oct. 1 Interest Expense 43,125

Cash ($750,000 × 0.11 × 6/12) 41,250

Discount on Notes Payable ($30,000 ÷ 8 × 6/12) 1,875

*Semiannual interest payment and amortization of*

*discount.*

Dec. 31 Interest Expense [($750,000 × 0.11) × 3/12] 20,625

Interest Payable 20,625

*Accrual of three months’ interest.*

Interest Expense [($30,000 ÷ 8) × 3/12] (rounded) 938

Discount on Notes Payable 938

*Amortization of discount: three months.*

2015

Apr. 1 Interest Expense 20,625

Interest Payable 20,625

Cash 41,250

*Semiannual interest payment.*

Interest Expense [($30,000 ÷ 8) × 3/12] (rounded). 938

Discount on Notes Payable 938

*Discount amortization for three months.*

Notes Payable 750,000

Loss on Redemption of Notes Payable 45,000

Discount on Notes Payable ($30,000 × 4/8) 15,000

Cash ($750,000 × 1.04) 780,000

*Redemption of notes at 104.*

L. Baum Books:

2011

July 1 Investment in Fitzgerald Inc. Notes 757,500

Interest Receivable 20,625

Cash 778,125

*Purchase of $750,000 of 11% notes for $757,500*

*($750,000 × 1.01) plus accrued interest of $20,625*

*($750,000 × 0.11 × 3/12).*

12–55. (Continued)

2011

Oct. 1 Cash 41,250

Investment in Fitzgerald Inc. Notes 242\*

Interest Revenue 20,383

Interest Receivable 20,625

*Semiannual interest receipt.*

\*Total amortization period—93 months. 3/93 × $7,500 = $242 (rounded)

Dec. 31 Interest Revenue 242

Investment in Fitzgerald Inc. Notes 242

*Amortization of premium on notes for three months.*

Interest Receivable 20,625

Interest Revenue 20,625

*Accrual of three months’ interest.*

(*Note*: To simplify this problem, it is assumed that the investors are ignoring year-to-year market value changes in accounting for this note investment. As discussed in Chapter 14, this is the accounting procedure used when an investment is classified as held to maturity.)

2014

Apr. 1 Cash 41,250

Interest Receivable 20,625

Interest Revenue 20,383

Investment in Fitzgerald Inc. Notes (3/93 × $7,500) 242

*Semiannual interest receipt.*

June 1 Interest Receivable ($750,000 × 0.11 × 2/12) 13,750

Interest Revenue 13,750

*Accrual of two months’ interest.*

Interest Revenue (2/93 × $7,500) 161

Investment in Fitzgerald Inc. Notes 161

*Amortization of premium—two months.*

Cash 732,750\*

Loss on Sale of Notes 35,677

Investment in Fitzgerald Inc. Notes 754,677†

Interest Receivable 13,750

*Sale of notes.*

\*$750,000 × 0.96 = $720,000 + $13,750 interest – $1,000 brokerage costs =

$732,750

†35 months elapsed since purchase. 93 – 35 = 58 months remaining

58/93 × $7,500 = $4,677 unamortized premium

Total investment: $750,000 + $4,677 = $754,677

12–55. (Concluded)

J. Gott Books:

2014

June 1 Investment in Fitzgerald Inc. Notes 721,500\*

Interest Receivable 13,750

Cash 735,250

*Purchase of $750,000 of 11% notes for $721,500*

*[($750,000 × 0.96) + $1,500] plus accrued interest*

*of $13,750 ($750,000 × 0.11 × 2/12).*

\*($750,000 × 0.96) + $1,500 = $721,500

Oct. 1 Cash 41,250

Interest Revenue. 27,500

Interest Receivable. 13,750

*Semiannual interest receipt.*

1 Investment in Fitzgerald Inc. Notes 1,966\*

Interest Revenue 1,966

*Amortization of premium—four months.*

\*$750,000 – $721,500 = $28,500 discount;

4/58 × $28,500 = $1,966 (rounded)

Dec. 31 Interest Receivable 20,625

Interest Revenue 20,625

*Accrual of three months’ interest.*

31 Investment in Fitzgerald Inc. Notes 1,474\*

Interest Revenue 1,474

*Amortization of premium—three months.*

\*3/58 × $28,500 = $1,474 (rounded)

2015

Apr. 1 Cash 41,250

Interest Receivable. 20,625

Interest Revenue 20,625

*Receipt of interest from Fitzgerald prior to redemption.*

1 Investment in Fitzgerald Inc. Notes 1,474\*

Interest Revenue 1,474

*Amortization of premium—three months.*

\*3/58 × $28,500 = $1,474 (rounded)

1 Cash ($750,000 × 1.04) 780,000

Investment in Fitzgerald Inc. Notes 726,414\*

Gain on Redemption of Notes 53,586

*Redemption of notes at 104.*

\*Unamortized discount (48 months early):

48/58 × $28,500 = $23,586;

$750,000 – $23,586 = $726,414

12–56.

1. Jan. 21 Bond Investment—Wilson Chemical 309,000

Interest Receivable ($312,773 – $309,000) 3,773

Cash 312,773

Mar. 1 Interest Revenue 87

Bond Investment—Wilson Chemical 87\*

\*Premium amortization for one month on bonds of $150,000 sold:

(Life of bonds, 52 months to nearest month)

1/52 × $150,000 ÷ $300,000 × $9,000 = $87

Cash 159,000

Bond Investment—Wilson Chemical 154,413

Gain on Sale of Wilson Chemical 9% Bonds 1,212\*

Interest Revenue ($150,000 × 0.09 × 3/12) 3,375

\*Proceeds from sale of bonds: $159,000 – $3,375 $ 155,625

Carrying value of bonds of $150,000 sold:

[($150,000 ÷ $300,000) × $309,000] – $87 154,413

Gain on sale $ 1,212

(*Note:*  The $3,375 in interest received could also be allocated between Interest Revenue and Interest Receivable. In this solution, all of the Interest Receivable is eliminated on June 1.)

June 1 Cash ($150,000 × 0.09 × 6/12) 6,750

Bond Investment—Wilson Chemical 346\*

Interest Revenue 2,631

Interest Receivable 3,773

\*Premium amortization on bonds of $150,000 for

4 months (February 1–June 1):

4/52 × $150,000 ÷ $300,000 × $9,000 = $346

Nov. 1 Interest Revenue 231

Bond Investment—Wilson Chemical 231\*

\*Premium amortization on bonds called:

5/52 × $80,000 ÷ $300,000 × $9,000 = $231 (rounded)

Cash 84,600

Loss on Redemption of Wilson Chemical 9% Bonds 385\*

Bond Investment—Wilson Chemical 81,985

Interest Revenue ($80,000 × 0.09 × 5/12) 3,000

\*Bond redemption:

Carrying value of bonds redeemed:

$82,400 – $415 ($2,400 × 9/52) $ 81,985

Redemption price: $80,000 × 102% 81,600

Loss on redemption $ 385

12–56. (Concluded)

Dec. 1 Cash ($70,000 × 0.09 × 6/12) 3,150

Bond Investment—Wilson Chemical 242\*

Interest Revenue 2,908

\*6/52 × $70,000 ÷ $300,000 × $9,000 = $242 (rounded)

31 Interest Receivable ($70,000 × 0.09 × 1/12) 525

Bond Investment—Wilson Chemical 40\*

Interest Revenue 485

\*1/52 × $70,000 ÷ $300,000 × $9,000 = $40 (rounded)

(*Note*: To simplify this problem, it is assumed that Stiller is ignoring year-to-year market value changes in accounting for this bond investment. As discussed in Chapter 14, this is the accounting procedure used when an investment is classified as held to maturity.)

2. Dec. 31 Bond Investment—Wilson Chemical 12,383

Interest Receivable 525

Loss on Redemption of Wilson Chemical 9% Bonds 385

Interest Revenue 12,081

Gain on Sale of Wilson Chemical 9% Bonds 1,212

(*Note:* Several entries could be made to correct the accounts, but the net effect on the accounts is summarized by the preceding single compound entry.)

The investment account should have a balance of $71,656 [($70,000 ÷ $300,000 × $309,000) – ($2,100 × 11/52)]. The account as maintained shows a balance of $59,273, thus requiring a debit of $12,383. Interest of $525 is accrued for one month. Interest revenue and the gain accounts report credit balances as determined in part (1).

12–57.

2010

Apr. 1 Cash 316,500\*

Bonds Payable 300,000

Premium on Bonds Payable 9,000

Interest Payable 7,500

*To record sale of bonds.*

\*Selling price of bonds: $300,000 @ 103 $309,000

Accrued interest: $300,000 × 0.10 × 3/12 7,500

Proceeds from sale of bonds $316,500

July 1 Premium on Bonds Payable 231\*

Interest Payable 7,500

Interest Expense 7,269

Cash ($300,000 × 0.10 × 6/12) 15,000

*To record payment of semiannual interest.*

\*Premium amortization:

April 1, 2010 to January 1, 2020 = 117 months

$9,000 × 3/117 = $231 amortization for three months (rounded)

12–57. (Continued)

2010

Dec. 31 Interest Expense 15,000

Interest Payable 15,000

*To record accrual of semiannual interest.*

Premium on Bonds Payable ($9,000 × 6/117) 462

Interest Expense 462

*To record premium amortization.*

2015

Jan. 1 Interest Payable 15,000

Cash 15,000

*To record payment of semiannual interest.*

Apr. 1 Premium on Bonds Payable 77\*

Interest Expense. 77

*To record premium amortization.*

\*Premium amortization for three months on reacquired bonds:

$9,000 × 1/3 × 3/117 = $77 (rounded)

1 Bonds Payable 100,000

Premium on Bonds Payable 1,462

Interest Expense 2,500

Gain on Bond Reacquisition 2,462\*

Cash 101,500†

*To record reacquisition of bonds.*

\*Gain on bond reacquisition:

Par value of reacquired bonds $ 100,000

Unamortized premium: April 1, 2015–

January 1, 2020 = 57 months

$9,000 × 1/3 × 57/117 (rounded) 1,462

Carrying value of bonds at reacquisition date . $101,462

Cost to reacquire bonds ($100,000 @ 99) 99,000

$ 2,462

†Cash paid in bond reacquisition:

Cost to reacquire bonds $ 99,000

Interest for three months ($100,000 × 0.10 × 3/12) 2,500

$101,500

12–57. (Concluded)

2015

June 30 Premium on Bonds Payable ($9,000 × 2/3 × 6/117) 308

Interest Expense. 308

*To record premium amortization.*

Bonds Payable 200,000

Premium on Bonds Payable 2,769

Interest Expense 10,000

Gain on Bond Reacquisition 6,769\*

Cash 206,000†

*To record reacquisition of bonds.*

\*Gain on bond reacquisition:

Par value of reacquired bonds $ 200,000

Unamortized premium: July 1, 2015–

January 1, 2020 = 54 months

$9,000 × 2/3 × 54/117 2,769

Carrying value of bonds at reacquired date $ 202,769

Cost to reacquire bonds ($200,000 @ 98) 196,000

$ 6,769

†Cash paid in bond reacquisition:

Cost to reacquire bonds $ 196,000

Interest for six months ($200,000 × 0.10 × 6/12) 10,000

$ 206,000

30 Cash 200,000

Bonds Payable 200,000

*To record sale of 9% bonds.*

12–58.

1. Maturity value, Table ll, n = 20, i = 4% (0.4564 × $100,000,000) $45,640,000

or with a business calculator:

FV = $100,000,000; N = 20; I = 4% → PV = $45,638,695

Interest payments, Table IV,

n = 20, i = 4% 13.5903

n = 10, i = 4% 8.1109

5.4794 × $5,000,000 27,397,000

or with a business calculator:

PMT = $5,000,000; N = 10; I = 4% → PV = $40,554,479

Then, to discount the deferred annuity back to the present:

FV = $40,554,479; N = 10; I = 4% → PV = $27,397,153

Market value $73,037,000

12–58. (Concluded)

Because interest payments do not begin until Year 6, students must be careful to include only the present value of those interest payments actually being made.

Cash 73,037,000

Discount on Bonds Payable 26,963,000

Bonds Payable 100,000,000

2. Cash 70,000,000

Loss on Sale of Assets 15,000,000

Net Assets 85,000,000

3. Maturity value, Table ll, n = 14, i = 7% (0.3878 × $100,000,000) $38,780,000

or with a business calculator:

FV = $100,000,000; N = 14; I = 7% → PV = $38,781,724

Interest payments, Table IV,

n = 14, i = 7% 8.7455

n = 4, i = 7% 3.3872

5.3583 × $5,000,000 26,791,500

or with a business calculator:

PMT = $5,000,000; N = 10; I = 7% → PV = $35,117,908

Then, to discount the deferred annuity back to the present:

FV = $35,117,908; N = 4; I = 7% → PV = $26,791,284

Market value $65,571,500

4. Bonds Payable 100,000,000

Discount on Bonds Payable 4,000,000

Cash 65,571,500

Gain on Bond Reacquisition 30,428,500

5. Mr. Dealer was able to buy his bonds back at a gain without ever having to make an interest payment because of the movement of interest rates. An increase in interest rates reduced the present value of the interest payments. In this case, rates increased to the point that the bonds were worth less than they originally were issued for.

6. Under current U.S. GAAP, Mr. Dealer would have to wait until the bonds were retired to recognize the gain arising from interest rate increases UNLESS he had initially elected to account for these bonds using the fair value option.

12–59.

2015

Aug. 1 Bonds Payable 200,000

Common Stock ($1 par) 1,800

Discount on Bonds Payable 2,675\*

Paid-ln Capital in Excess of Par 195,525†

*Conversion of bonds to stock.*

\*Amount to be amortized over 120 months at $150.00 per month $18,000

Less: Amortization for 13 months to July 31, 2015 1,950

Unamortized balance on July 31, 2015 $16,050

Write-off of unamortized bond discount:

× $16,050 = $2,675

†Paid-ln Capital in Excess of Par: $200,000 – ($1,800 + $2,675) = $195,525

Interest Payable 1,333

Cash 1,333

*To record payment of interest on bonds converted:*

*$200,000 at 8% for one month.*

31 Interest Expense 125\*

Discount on Bonds Payable 125

*Amortization of bond discount for August.*

\*Unamortized balance, July 31, 2015 $ 16,050

Less: Write-off of bond discount on August 1, 2015 2,675

Unamortized balance, August 1, 2015 $ 13,375

Amortization of bond discount: $13,375 ÷ 107 remaining months = $125

Interest Expense ($1,000,000 × 0.08 × 1/12) 6,667

Interest Payable 6,667

*To record accrued interest for August on $1,000,000 at 8%.*

Dec. 31 Interest Expense 125

Discount on Bonds Payable 125

*Amortization of bond discount for December.*

Interest Expense 6,667

Interest Payable 6,667

*To record accrued interest for December.*

Retained Earnings 91,010\*

Interest Expense 91,010

*To close interest expense account.*

\*Total amortization in 2015:

7 months × $150 $1,050

5 months × $125 625

Total amortization charged to interest expense $1,675

12–59. (Concluded)

Interest on bonds:

0.08 × $1,200,000 = $96,000 × 1/12 = $8,000 per month

0.08 × $1,000,000 = $80,000 × 1/12 = $6,667 per month

Total interest paid in 2015:

7 months × $8,000 $ 56,000

5 months × $6,667 33,335

$ 89,335

Total debits to interest expense:

Amortization of discount $ 1,675

Interest paid 89,335

$ 91,010

12–60.

1. Brewster Company (lssuer):

2014

Jan. 1 Cash 2,155,534\*

Bonds Payable 2,000,000

Premium on Bonds Payable 155,534

Investor:

2014

Jan. 1 Bond Investment—Brewster Company 2,155,534\*

Cash 2,155,534

COMPUTATIONS (for 11% bonds):

\* PV = R(PVF)

R = $2,000,000

PVF = 0.6499 (Table II, 5 years, 9% interest)

$2,000,000 × 0.6499 $1,299,800

or with a business calculator:

FV = $2,000,000; N = 5; I = 9% → PV = $1,299,863

PV = R(PVAF)

R = $220,000 ($2,000,000 × 11%)

PVAF = 3.8897 (Table IV, 5 years, 9% interest)

$220,000 × 3.8897 855,734

or with a business calculator:

PMT = $220,000; N = 5; I = 9% → PV = $855,723

$2,155,534

12–60. (Continued)

Brewster Company (Issuer):

2014

July 1 Cash 4,580,950†

Discount on Bonds Payable 419,050

Bonds Payable 5,000,000

Investor:

2014

July 1 Bond Investment—Brewster Company 4,580,950†

Cash 4,580,950

COMPUTATIONS (for 10% bonds):

†PV = R(PVF)

R = $5,000,000

PVF = 0.4970 (Table II, 12 periods, 6% interest)

$5,000,000 × 0.4970 $2,485,000

or with a business calculator:

FV = $5,000,000; N = 12; I = 6% → PV = $2,484,847

PV = R(PVAF)

R = $250,000 ($5,000,000 × 5%)

PVAF = 8.3838 (Table IV, 12 periods, 6% interest)

$250,000 × 8.3838 2,095,950

or with a business calculator:

PMT = $250,000; N = 12; I = 6% → PV = $2,095,961

$4,580,950

2. a.

Bond Conversion—Brewster Company:

2015

July 1 Bonds Payable 1,500,0001

Loss on Conversion of Bonds 185,3532

Discount on Bonds Payable 110,3533

Common Stock, $1 par 15,0004

Paid-ln Capital in Excess of Par 1,560,0005

12–60. (Continued)

COMPUTATIONS:

1$5,000,000 × 1,500/5,000 = $1,500,000

2FMV of common stock $ 1,575,000

Carrying value of bonds 1,389,647 (See note 6

below)

Loss on conversion $ 185,353

3$419,050 × 1,500/5,000 = $125,715 – $7,457 – $7,905 = $110,353 (See note 6 below)

415,000 shares × $1 = $15,000

515,000 shares × ($105 – $1) = $1,560,000

6Present value of bonds 7/1/2014 $ 1,374,285\*

Interest expense/revenue at 12% × 6/12 $ 82,457

Interest payment/receipt at 10% × 6/12 (75,000)

Discount amortization for period 7,457

Present value of bonds 1/1/2015 $ 1,381,742

Interest expense/revenue at 12% × 6/12 $ 82,905

Interest payment/receipt at 10% × 6/12 (75,000)

Discount amortization for period 7,905

Present value of bonds 7/1/2015 $ 1,389,647

\*Conversion of 1,500/5,000 bonds = 30% × $4,580,950 = $1,374,285

Early Bond Retirement—Brewster Company:

2015

Dec. 31 Premium on Bonds Payable 28,3421

Interest Expense 28,342

Bonds Payable 2,000,000

Interest Expense 220,0001

Premium on Bonds Payable 101,1902

Cash 2,200,0003

Gain on Bond Retirement 121,1904

12–60. (Concluded)

COMPUTATIONS:

1Present value of bonds 1/1/2014 $ 2,155,534

Interest payment/receipt at 11% $ 220,000

Interest expense/revenue at 9% (193,998)

Premium amortization for period 26,002

Present value of bonds 1/1/2015 $ 2,129,532

Interest payment/receipt at 11% $ 220,000

Interest expense/revenue at 9% (191,658)

Premium amortization for period 28,342

Present value of bonds 12/31/2015 $ 2,101,190

2$($2,155,534 – $2,000,000) – $26,002 – $28,342 = $101,190 (See note 1 above)

3$1,980,000 + $220,000 = $2,200,000

4Carrying value of bonds $ 2,101,190

Cash paid/received on bond retirement (1,980,000)

Gain on bond retirement $ 121,190

b.

Bond Conversion—Brewster Company:

2015

July 1 Bonds Payable 1,500,000

Discount on Bonds Payable 110,353

Common Stock, $1 par. 15,000

Paid-In Capital in Excess of Par 1,374,6471

COMPUTATION:

1Carrying value of bonds $ 1,389,647

[See computations for note 7 (2a)]

Less: Par value of common stock exchanged 15,000

Amount assigned to paid-in capital $ 1,374,647

Early Bond Retirement—Brewster Company:

Same as for (2a).

12–61.

1. The correct answer is c. Since the bonds were issued at 109, or 109% of the face amount of $1,000,000, the total proceeds were $1,090,000. The bonds included 50,000 detachable stock purchase warrants with a value of $4 each for a total of $200,000. The remainder of the proceeds, or $890,000, was attributed to the bonds. This results in a discount on bonds of $1,000,000 − $890,000, or $110,000. This solution assumes that the value of the bonds without the warrants cannot be separately determined.

2. The correct answer is a. Upon calling the 600 bonds at 102, Dome will pay $612,000 to retire the bonds. The carrying value of the bonds is the face value of $600,000 plus the unamortized premium of $65,000 for a total of $665,000. The difference is a gain on early extinguishment of debt equal to $53,000.

12–62.‡

2013

Dec. 31 Equipment 10,000

Gain on Sale of Equipment 10,000

*To write up equipment in preparation for debt*

*restructuring.*

Notes Payable 325,000

Interest Payable 40,000

Accumulated Depreciation—Equipment 35,000

Equipment 105,000

Notes Receivable 275,000

Gain on Restructuring of Debt 20,000

*To record settlement of debt with Voisin.*

2013

Dec. 31 Notes Payable 200,000

Cash 200,000

*To record payment to Stock.*

2014

Dec. 31 Interest Expense 13,500\*

Interest Payable 13,500

*To record accrual of interest owed to Stock.*

2015

Dec. 31 Interest Expense 13,903\*

Interest Payable 13,500

Notes Payable 450,000

Cash 477,403

*To record payment to Stock.*

‡Relates to Expanded Material.

12–62.‡ (Concluded)

\*Imputed interest rate:

$ 477,403 × PVF = $450,000 (rounded); PVF = 0.9426 from Table ll, Time Value of Money Review module;

Interest Rate = 3% (n = 2)

or with a business calculator:

PV = ($450,000); N = 2; FV = $477,403 → I = 3.00%

Date Payment 3% Interest Principal Balance

12/31/2013\* $650,000

12/31/2013 $200,000 — $200,000 450,000

12/31/2014 — $13,500 — 463,500

12/31/2015 477,403 13,903† 463,500 0

†Rounded

\*Before restructuring

12–63.‡

1. Total payment under original terms:

Principal due in five years $4,500,000

Interest at 10% for five years ($4,500,000 × 0.10 × 5) 2,250,000 $ 6,750,000

Total payment under revised terms:

Principal due in five years $4,000,000

Interest at 7% for five years ($4,000,000 × 0.07 × 5) 1,400,000 5,400,000

Difference in cash payments $ 1,350,000

2. 2014

Dec. 31 Interest Expense ($4,500,000 × 0.10 × 6/12) 225,000

Interest Payable 450,000

Cash 675,000

*To record payment of interest.*

Notes Payable 4,500,000

Restructured Debt 4,500,000

*To reclassify debt. No loss recognized*

*because total payments exceed*

*carrying value of debt.*

‡Relates to Expanded Material.

12–63.‡ (Concluded)

2015

June 30 Interest Expense ($4,500,000 × 0.042 × 6/12) 94,500

Restructured Debt ($140,000 – $94,500) 45,500

Cash ($4,000,000 × 0.07 × 6/12) 140,000

*First semiannual interest payment after*

*restructuring.*

Dec. 31 Interest Expense 93,545\*

Restructured Debt ($140,000 – $93,545) 46,455

Cash 140,000

*Second semiannual interest payment*

*after restructuring.*

\*($4,500,000 – $45,500) × 0.042 × 6/12 = $93,545

*Note:* The implicit interest rate of 4.2% can be computed as follows:

**PV = –$4,500,000 (carrying amount of the loan is unchanged because all interest is paid up under the old terms)**

**PMT = $140,000 ($4,000,000 × 0.07 × 6/12)**

**FV = $4,000,000 ($4,500,000 – $500,000)**

**N= 10 (5 years remaining; semiannual interest payments)**

**I = ???; the solution is 2.10%.**

**The semiannual implicit interest rate is 2.10%, so the annual equivalent is approximately 4.2%.**

‡Relates to Expanded Material.

CASES

Discussion Case 12–64

Both leases and pro athletes’ contracts involve the probable future sacrifice of economic benefit by the owner of the team. The differences between the two events relate to certainty and measurement, which in turn are dependent on the specific terms of the leases or contracts. It is possible that a player may not fulfill contractual obligations due to poor performance or other reasons. Thus, a player’s contract might be considered a less-than-probable liability and thereby not require disclosure. Regarding measurement, it is generally more difficult to measure the future benefit to be provided by an individual than to measure the benefit provided by a building. The future benefit to be provided by a leased building remains relatively constant, while the benefit from an individual player can vary a great deal.

Investors and creditors would prefer more information to less. If sports franchises are locked into long-term player contracts, investors and creditors would want that information disclosed as it would affect their assessment of future cash flows of the organization.

Discussion Case 12–65

**a.** Reclassification of the note payable is permitted only if one of the following conditions is met:   
(1) the refinancing must actually take place during the period between year-end and the date the balance sheet is issued or (2) a definite agreement for refinancing is reached prior to issuance of the balance sheet. It is not enough to indicate that such refinancing will probably take place.

**b.** Compensated absences must be accrued wherever possible, even though estimates are required. Class discussion could include exploration of how estimates might be made when the variables mentioned by the controller are present. It is not necessary that specific employees be identified for the liability. Overall averages may be used to help compute an amount to be recorded.

Discussion Case 12–66

Although the use of fair values using market interest rates for assets has been discussed for many years, the application of the same theory to liabilities is not well understood. If a company has an outstanding liability and interest rates rise, the fair value of the security representing the liability will fall. That is, the fixed interest rate on the security, compared to the increased market rate, will be reflected in a lower security value. If an investor reduces the asset value to reflect this decline and recognizes a loss, some would argue that a creditor should be able to reduce the liability to reflect what could happen if the creditor refinanced the debt and was able to retire the debt for less than maturity value. To the creditor, this would represent a gain. Many financial institutions claim a relationship between their assets and liabilities that suggests this symmetry of treatment. Of course, if interest rates fall, the value of the security would rise to reflect the favorable security values relative to the market rates and a loss would occur. The FASB had decided to allow companies this “fair value option.”

Discussion Case 12–67‡

The discussion of this case will give instructors the opportunity to explore the impact GAAP can have on the informational content of financial statements. The facts are based on a real case that occurred in the early 1970s. The company was Aranco, Inc. The auditors in the case agreed with the company and allowed it to transfer the amount carried in the bond liability account to preferred stock. They reported this in their audit report as an exception to GAAP as specified by the APB but indicated that under the circumstances, they felt the alternative accounting treatment was preferred.

After this case occurred, the FASB issued pre-Codification *Statement No. 15*, “Accounting by Debtors and Creditors for Troubled Debt Restructuring.” This statement is the basis for FASB ASC Subtopic 470-60 (Debt—Troubled Debt Restructurings by Debtors). In this statement, an equity swap, such as the one described in this case, is to be accounted for at the fair values of the debt or equity involved. This statement solidifies the earlier position of the profession and would make it even more difficult to justify a departure from GAAP. However, the reporting of a gain in the midst of poor operating conditions does result in strange financial statements. Alternative reporting systems may be necessary to more clearly distinguish between this type of gain and other more common operating gains and losses. Without this special treatment, readers could misinterpret the reported income. Instructors may wish to explore possible variations with their students.

Case 12–68

**1.** The largest liability in Disney’s 2011 balance sheet is long-term “borrowings” totaling $10,922 million.

**2.** Disney’s total borrowings in 2010 and 2011 are as follows:

2011 2010

Current portion $ 3,055 $ 2,350

Long-term borrowings 10,922 10,130

Total borrowings $ 13,977 $12,480

Total borrowings increased by 12.0% in 2011 [($13,977 − $12,480)/$12,480].

**3.** In Note 9, we see that U.S. medium-term notes constituted 60.1% of Disney’s total borrowings in 2011.

Case 12–69

**1.** Deferred Game Revenues results when the Celtics receive cash in advance of a service being provided. This liability represents the portion of season ticket payments that has been received by the Celtics but which has not yet been earned through the playing of games.

**2.** In some cases when athletes negotiate their contracts, the contract stipulates that a portion of the current year’s salary be paid in the future, often after the player has retired. This amount is included as a liability because it relates to the current (or past) period’s performance. This account does not represent amounts to be paid in the future for future years’ performances.

‡Relates to Expanded Material.

Case 12–69 (Concluded)

**3.** Total assets as of June 30, 2001, were $26,161,019 ($31,231,706 + $50,000,000 + $5,182,821 − $60,253,508). Because total partners’ capital is a negative amount, we can see that total liabilities are in excess of total assets.

**4.** The amount of recorded assets is just half of the amount owed on the $50 million note. As noted, the partners’ capital account shows a deficit of $60 million. However, these numbers are based on the reported assets and liabilities. The reputation, name, and membership in the NBA of the Boston Celtics are all assets that are not reported in the balance sheet at current market value. However, as lenders consider making loans to the Celtics, they do consider these economic assets. Thus, the company is able to continue to function even though reported liabilities are in excess of reported assets.

Case 12–70

**1.** Hewlett-Packard’s current ratio in 2011 is 1.01. Dell’s current ratio in 2011 is 1.34. Thus, Dell appears to be the more liquid of the two companies.

**2.** HP’s debt-to-equity ratio is 2.32 when debt is defined as total liabilities. Dell’s ratio is 3.99 using the same definition. Thus, Dell has much more debt relative to stockholders’ equity.

**3.** For HP, current liabilities are 55.7% of total liabilities. For Dell, current liabilities are 61.8% of total liabilities. HP has more long-term debt in its financing mix.

**4.** Hewlett-Packard has a larger retained earnings balance primarily because it has been in business a lot longer than Dell. HP was making calculators long before Dell was a dream in its founder’s mind.

**5.** Dell has over $31 billion of treasury stock on its balance sheet; this number reduces total stockholders’ equity and is the main reason for Dell’s total stockholders’ equity being so much lower than retained earnings. The accounting for treasury stock is explained in Chapter 13.

Case 12–71

**1.** Altria’s current ratio for the year is 0.93 ($7,131/$7,643).

**2.** Because Altria has two distinct segments, it breaks down its assets and liabilities into these two segments so that users of the financial statements can determine how the company has allocated its assets and the liabilities associated with those assets. Many large companies with multiple segments provide similar disclosure. For example, both Ford Motor and General Electric, with a manufacturing segment and a financing segment, do the same thing. In many cases, this disclosure is in the notes to the financial statements.

1. **a.** Using only long-term debt in the computation, Altria’s debt-to-equity ratio is 3.55 ($13,089/$3,683).

**b.** Using all the liabilities, the company’s debt-to-equity ratio is 9.03 ($33,247/$3,683). The big difference in the two numbers results from Altria having a lot of liabilities other than just long-term debt. The first question one should ask when interpreting a debt-to-equity ratio is, what is the definition of debt being used?

Case 12–72

**1.** Recall that traditional bonds consist of two parts: a lump sum distribution and an annuity. Each of these parts is valued by the market when determining the market price of bonds. While not having to make semiannual interest payments is appealing to a firm from a cash flow perspective, the lack of interest payments also reduces the market value of the bond. Because there is no annuity associated with a zero-interest bond, the market will reduce the price of the bond accordingly. Thus, the proceeds from a zero-interest bond are often much less than those received from the sale of more traditional debt instruments.

2. Zero-interest bonds:

Lump sum payment: Table II, 10%, 10 periods (0.3855 × $100,000) $38,550

Deferred-interest bonds:

Lump sum payment: Table II, 10%, 10 periods $38,550

Deferred interest payments:

Table II, 10%, period 6 (0.5645 × $10,000) $5,645

Table II, 10%, period 7 (0.5132 × $10,000) 5,132

Table II, 10%, period 8 (0.4665 × $10,000) 4,665

Table II, 10%, period 9 (0.4241 × $10,000) 4,241

Table II, 10%, period 10 (0.3855 × $10,000) 3,855 23,538

Present value of bond $62,088

Traditional bonds:

Lump sum payment: Table II, 10%, 10 periods $38,550

Interest payments: Table IV, 10%, 10 periods (6.1446 × $10,000) 61,446

Present value of bond $99,996

**3.** As illustrated by this example, the interest terms associated with a debt instrument can significantly affect the debt’s market value. Bonds that pay interest require periodic outflows of cash in the form of interest, while zero-interest bonds require a large cash outflow only when the bonds are redeemed. Zero-interest bonds are attractive because the cash outflow is often far into the future. However, as the maturity date nears, firms often find themselves unprepared to make the cash payment necessary to retire the debt.

Case 12–73

Debt covenants exist to protect the interests of debtholders. In some cases, these debt covenants might cause managers to make decisions that are not in the best long-term interest of the company. In this case, the Larsen brothers are asking you to manipulate the current ratio, not for a business purpose, but instead to ensure that debt covenants are not violated. Now, one could argue that it is in the best interest of the company to comply with the debt covenants and if it takes a little accounting magic to do so, then so be it. Students should realize that accounting information is used for a variety of purposes and that tracking profits and losses is only one purpose. Financial statements are also used to protect the interests of many parties, debtholders in this case. Preparers of financial statements must keep the interests of these other users in mind as they prepare financial statements.

Case 12–74

Solutions to this problem can be found on the Instructor’s Resource CD-ROM or downloaded from the Web at www.cengagebrain.com.