

# CHAPTER 14

## Non-Current Liabilities

### ASSIGNMENT CLASSIFICATION TABLE (BY TOPIC)

Topics	Questions	Brief Exercises	Exercises	Problems	Concepts for Analysis
1. Non-current liability; classification; definitions.	1, 10, 11, 19, 20, 22, 23, 24		1, 2	10, 11	1, 2, 3
2. Issuance of bonds; types of bonds.	2, 3, 4, 9, 17	1, 2, 3, 4, 5, 6, 7	3, 4, 5, 6, 7, 8, 9, 10	1, 2, 3, 7, 8, 9, 10, 14	1, 3, 6
3. Premium and discount; amortization schedules.	5, 6, 7, 8, 10, 17	3, 4, 6, 7, 8	4, 5, 6, 7, 8, 9, 10, 15	1, 2, 3, 4, 7, 8, 9, 10, 14	1, 2, 3, 4
4. Retirement and refunding of debt.	18, 21	13	14, 15, 16	2, 7, 8, 9, 10, 14	3, 4, 5
5. Imputation of interest on notes.	11, 12, 13, 14, 15	9, 10, 11, 12	11, 12, 13	5, 6	
6. Disclosures of non-current obligations.	24, 25, 26	17	22	14	1, 3, 5
7. Debt extinguishment.	16, 19, 20	14, 15	17, 18, 19, 20	12, 13	11
8. Fair value option.	22, 23	16	21		
9. Convergence.	28, 29, 30				

## ASSIGNMENT CLASSIFICATION TABLE (BY LEARNING OBJECTIVE)

Learning Objectives	Brief Exercises	Exercises	Problems
1. Describe the formal procedures associated with issuing long-term debt.			
2. Identify various types of bond issues.		1, 2	
3. Describe the accounting valuation for bonds at date of issuance.	1, 2, 3, 4, 5, 6, 7, 8	3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16	1, 2, 3, 7, 8, 9, 10, 14
4. Apply the methods of bond discount and premium amortization.	2, 3, 4, 5, 6, 7, 8	3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16	1, 2, 3, 4, 7, 8, 9, 10, 14
5. Explain the accounting for long-term notes payable.	9, 10, 11, 12	11, 12, 13	5, 6
6. Describe the accounting for the extinguishment of non-current liabilities.	13, 14, 15	14, 15, 16, 17, 18, 19, 20	2, 7, 8, 9, 10, 11, 12, 13, 14
7. Describe the accounting for the fair value option.	16	21	
8. Explain the reporting of off-balance-sheet financing arrangements.			
9. Indicate how to present and analyze non-current liabilities.	17	22	14

## ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E14-1	Classification of liabilities.	Simple	15–20
E14-2	Classification.	Simple	15–20
E14-3	Entries for bond transactions.	Simple	15–20
E14-4	Entries for bond transactions.	Simple	15–20
E14-5	Entries for bond transactions.	Simple	15–20
E14-6	Amortization schedule.	Simple	15–20
E14-7	Determine proper amounts in account balances.	Moderate	15–20
E14-8	Entries and questions for bond transactions.	Moderate	20–30
E14-9	Entries for bond transactions.	Moderate	15–20
E14-10	Information related to various bond issues.	Simple	20–30
E14-11	Entries for zero-interest-bearing notes.	Simple	15–20
E14-12	Imputation of interest.	Simple	15–20
E14-13	Imputation of interest with right.	Moderate	15–20
E14-14	Entry for retirement of bond; bond issue costs.	Simple	20–25
E14-15	Entries for retirement and issuance of bonds.	Simple	12–16
E14-16	Entries for retirement and issuance of bonds.	Simple	10–15
E14-17	Settlement of debt.	Moderate	15–20
E14-18	Loan modification.	Moderate	20–30
E14-19	Loan modification.	Moderate	25–30
E14-20	Entries for settlement of debt.	Moderate	20–25
E14-21	Fair value option.	Moderate	20–25
E14-22	Long-term debt disclosure.	Simple	10–15
P14-1	Analysis of amortization schedule and interest entries.	Simple	15–20
P14-2	Issuance and retirement of bonds.	Moderate	25–30
P14-3	Negative amortization.	Moderate	20–30
P14-4	Effective-interest method.	Moderate	40–50
P14-5	Entries for zero-interest-bearing note.	Simple	15–25
P14-6	Entries for zero-interest-bearing note; payable in installments.	Moderate	20–25
P14-7	Issuance and retirement of bonds; income statement presentation.	Simple	15–20
P14-8	Comprehensive bond problem.	Moderate	50–65
P14-9	Issuance of bonds between interest dates, retirement.	Moderate	20–25
P14-10	Entries for life cycle of bonds.	Moderate	20–25
P14-11	Modification of debt.	Moderate	15–20
P14-12	Modification of note under different circumstances.	Moderate	25–35
P14-13	Debtor/creditor entries for continuation of debt with new effective interest.	Moderate	20–30
P14-14	Comprehensive problem; issuance, classification, reporting.	Moderate	20–25

## ASSIGNMENT CHARACTERISTICS TABLE (Continued)

<b>Item</b>	<b>Description</b>	<b>Level of Difficulty</b>	<b>Time (minutes)</b>
CA14-1	Bond theory: statement of financial position presentations, interest rate, premium.	Moderate	25–30
CA14-2	Various non-current liability conceptual issues.	Moderate	10–15
CA14-3	Bond theory: price, presentation, and retirement.	Moderate	15–25
CA14-4	Bond theory: amortization and gain or loss recognition.	Simple	20–25
CA14-5	Off-balance-sheet financing.	Moderate	20–30
CA14-6	Bond issue (ethics.)	Moderate	23–30

## ANSWERS TO QUESTIONS

1. (a) Funds might be obtained through long-term debt from the issuance of bonds, and from the signing of long-term notes and mortgages.
  - (b) A bond indenture is a contractual agreement (signed by the issuer of bonds) between the bond issuer and the bondholders. The bond indenture contains covenants or restrictions for the protection of the bondholders.
  - (c) A mortgage is a document which describes the security for a loan, indicates the conditions under which the mortgage becomes effective (that is, conditions of default), and describes the rights of the mortgagee under default relative to the security. The mortgage accompanies a formal promissory note and becomes effective only upon default of the note.
2. If the entire bond matures on a single date, the bonds are referred to as **term bonds**. **Mortgage bonds** are secured by real estate. **Collateral trust bonds** are secured by the securities of other corporations. **Debenture bonds** are unsecured. The interest payments for **income bonds** depend on the existence of operating income in the issuing company. **Callable bonds** may be called and retired by the issuer prior to maturity. **Registered bonds** are issued in the name of the owner and require surrender of the certificate and issuance of a new certificate to complete the sale. A **bearer** or **coupon bond** is not recorded in the name of the owner and may be transferred from one investor to another by mere delivery. **Convertible bonds** can be converted into other securities of the issuing corporation for a specified time after issuance. **Commodity-backed bonds** (also called asset-linked bonds) are redeemable in measures of a commodity. **Deep-discount bonds** (also called zero-interest bonds) are sold at a discount which provides the buyer's total interest payoff at maturity.
3. (a) Yield rate—the rate of interest actually earned by the bondholders; it is synonymous with the effective and market rates.
  - (b) Nominal rate—the rate set by the party issuing the bonds and expressed as a percentage of the par value; it is synonymous with the stated rate.
  - (c) Stated rate—synonymous with nominal rate.
  - (d) Market rate—synonymous with yield rate and effective rate.
  - (e) Effective rate—synonymous with market rate and yield rate.
4. (a) Maturity value—the face value of the bonds; the amount which is payable upon maturity.
- (b) Face value—synonymous with par value and maturity value.
  - (c) Market value—the amount realizable upon sale.
  - (d) Par value—synonymous with maturity and face value.
5. A discount on bonds payable results when investors demand a rate of interest higher than the rate stated on the bonds. The investors are not satisfied with the nominal interest rate because they can earn a greater rate on alternative investments of equal risk. They refuse to pay par for the bonds and cannot change the nominal rate. However, by lowering the amount paid for the bonds, investors can alter the effective rate of interest. A premium on bonds payable results from the opposite conditions. That is, when investors are satisfied with a rate of interest lower than the rate stated on the bonds, they are willing to pay more than the face value of the bonds in order to acquire them, thus reducing their effective rate of interest below the stated rate.

## Questions Chapter 14 (Continued)

6. The amortization of a bond premium decreases interest expense while the amortization of a bond discount increases interest expense over the life of a bond.
7. Bond discount and bond premium are amortized on an effective-interest basis. The effective-interest method results in an increasing or decreasing amount of interest each period. This is because interest is based on the carrying amount of the bond issuance at the beginning of each period. The effective-interest method results in an increasing or decreasing dollar amount of interest and a constant rate of interest over the life of the bonds. The difference between the interest expense and the interest paid is the amount of discount or premium amortized each period.
8. The annual interest expense will decrease each period throughout the life of the bonds. Under the effective-interest method the interest expense each period is equal to the effective or yield interest rate times the book value of the bonds at the beginning of each interest period. When bonds are sold at a premium, their book value declines to face value over their life; therefore, the interest expense declines also.
9. Bond issuance costs should be recorded as a reduction to the issue amount of the bond payable and amortized into expense over the life of the bond, through an adjustment to the effective-interest rate.
10. Amortization of bond discount will increase interest expense. A discount on bonds payable results when investors demand a rate of interest higher than the rate stated on the bonds. The investors are not satisfied with the nominal interest rate because they can earn a greater rate on alternative investments of equal risk. They refuse to pay par for the bonds and cannot change the nominal rate. However, by lowering the amount paid for the bonds, investors can increase the effective rate of interest.
11. The entire arrangement must be evaluated and an appropriate interest rate imputed. This is done by (1) determining the fair value of the property, goods, or services exchanged or (2) determining the fair value of the note, whichever is more clearly determinable.
12. If a note is issued for cash, the present value is assumed to be the cash proceeds. If a note is issued for noncash consideration, the present value of the note should be measured by the fair value of the property, goods, or services or by an amount that reasonably approximates the fair value of the note (whichever is more clearly determinable).
13. When a debt instrument is exchanged in a bargained transaction entered into at arm's length, the stated interest rate is presumed to be fair unless: (1) no interest rate is stated, or (2) the stated interest rate is unreasonable, or (3) the stated face amount of the debt instrument is materially different from the current sales price for the same or similar items or from the current fair value of the debt instrument.
14. Imputed interest is the interest factor (a rate or amount) assumed or assigned which is different from the stated interest factor. It is necessary to impute an interest rate when the stated interest rate is presumed to be unreasonable. The imputed interest rate is used to establish the present value of the debt instrument by discounting, at that imputed rate, all future payments on the debt instrument.

## Questions Chapter 14 (Continued)

**Note to instructor:** In imputing interest, the objective is to approximate the rate which would have resulted if an independent borrower and an independent lender had negotiated a similar transaction under comparable terms and conditions with the option to pay the cash price upon purchase or to give a note for the amount of the purchase which bears the prevailing rate of interest to maturity. In order to accomplish that objective, consideration must be given to (1) the credit standing of the issuer, (2) restrictive covenants, (3) collateral, (4) payment and other items pertaining to the debt, (5) the existing prime interest rate, and (6) the prevailing rates for similar instruments of issuers with similar credit ratings.

15. A **fixed-rate mortgage** is a note that requires payment of interest by the mortgagor at a rate that does not change during the life of the note. A **variable-rate mortgage** is a note that features an interest rate that fluctuates with the market rate; the variable rate generally is adjusted periodically as specified in the terms of the note and is usually limited in the amount of each change in the rate up or down and in the total change that can be made in the rate.
16. Three different types of situations result with extinguishments (1) Settlement with cash; (2) Exchanging assets or securities; and (3) Modification of terms.
17. The call feature of a bond issue grants the issuer the privilege of purchasing, after a certain date at a stated price, outstanding bonds for the purpose of reducing indebtedness or taking advantage of lower interest rates. The call feature does not affect the amortization of bond discount or premium; because early redemption is not a certainty, the life of the bonds should be used for amortization purposes.
18. It is sometimes desirable to reduce bond indebtedness in order to take advantage of lower prevailing interest rates. Also the company may not want to make a very large cash outlay all at once when the bonds mature.

Bond indebtedness may be reduced by either issuing bonds callable after a certain date and then calling some or all of them, or by purchasing bonds on the open market and then retiring them.

When a portion of bonds outstanding is going to be retired, it is necessary for the accountant to make sure any corresponding discount or premium is properly amortized. When the bonds are extinguished, any gain or loss should be reported as other income and expense.

19. A transfer of noncash assets (real estate, receivables, or other assets) or the issuance of the debtor's stock can be used to settle a debt obligation in an extinguishment. In these situations, the noncash assets or equity interest given should be accounted for at their fair value. The debtor is required to determine the excess of the carrying amount of the payable over the fair value of the assets or equity transferred (gain). The debtor recognizes a gain equal to the amount of the excess. In addition, the debtor recognizes a gain or loss on disposition of assets to the extent that the fair value of those assets differs from their carrying amount (book value).
20. (a) The creditor will grant concessions in debt modification situation because it appears to be the more likely way to ensure the highest possible collection on the loan.
- (b) The creditor might grant any one or a combination of the following concessions:
1. Reduce the face amount of the debt.
  2. Accept noncash assets or equity interests in lieu of cash in settlement.
  3. Reduce the stated interest rate.
  4. Extend the maturity date of the face amount of the debt.
  5. Reduce or defer any accrued interest.

**Questions Chapter 14 (Continued)**

21. The debtor will record a gain when the discounted restructured cash flows are less than the carrying value of the loan. If a gain is recognized, the modified note is recorded at its fair value. Subsequent payments will include a charge to Interest Expense based on the market-interest rate.
22. The fair value option gives companies the choice to record their non-current liabilities at fair value. The controversy in applying the fair value option involves companies recording an unrealized gain when its credit worthiness is becoming worse. This decline results in the fair value of the debt declining resulting in an unrealized gain.
23. Unrealized Holding Gain or Loss-Income..... 2,600  
     Note Payable (€22,600 – €20,000)..... 2,600
24. The required disclosures at the statement of financial position date are future payments for sinking fund requirements and the maturity amounts of long-term debt during each of the next five years.
25. Off-balance-sheet financing is an attempt to borrow monies in such a way that the obligations are not recorded. Reasons for off-balance-sheet financing are:
- (1) Many believe removing debt enhances the quality of the statement of financial position and permits credit to be obtained more readily and at less cost.
  - (2) Loan covenants are less likely to be violated.
  - (3) The asset side of the statement of financial position is understated because fair value is not used for many assets. As a result, not reporting certain debt transactions offsets the nonrecognition of fair values on certain assets.
26. Forms of off-balance-sheet financing include (1) investments in non-consolidated subsidiaries for which the parent is liable for the subsidiary debt; (2) use of special purpose entities (SPEs), which are used to borrow money for special projects (resulting in take-or-pay contracts); (3) operating leases, which when structured carefully give the company the benefits of ownership without reporting the liability for the lease payments.
27. Under IFRS, a parent company does not have to consolidate a subsidiary company that is less than 50 percent owned. In such cases, the parent therefore does not report the assets and liabilities of the subsidiary. All the parent reports on its statement of financial position is the investment in the subsidiary. As a result, users of the financial statements may not understand that the subsidiary has considerable debt for which the parent may ultimately be liable if the subsidiary runs into financial difficulty.
28. Among the similarities are: (1) Both IFRS and U.S. GAAP require that companies indicate the current portion of long-term debt, (2) Both IFRS prohibit the recognition of liabilities for future losses; and (3) IFRS and U.S. GAAP are similar in the treatment of environmental liabilities.



**Questions Chapter 14 (Continued)**

Although the two IFRS are similar with respect to above topics, there are differences, including: (1) Under IFRS, the measurement of a provision related to a contingency is based on the best estimate of the expenditure required to settle the obligation. If a range of estimates is predicted and no amount in the range is more likely than any other amount in the range, the ‘mid-point’ of the range is used to measure the liability. In U.S. GAAP, the minimum amount in a range is used; (2) IFRS permits recognition of a restructuring liability, once a company has committed to a restructuring plan. U.S. GAAP has additional criteria (i.e., related to communicating the plan to employees), before a restructuring liability can be established; and (3) the recognition criteria for an asset requirement obligation are more stringent under U.S. GAAP—the liability is not recognized unless there is a present legal obligation and the fair value of the obligation can be reasonably estimated.

29. (1)	Cash .....	92,608	
	Bond Discount .....	7,392	
	Bonds Payable .....		100,000
(2)	Interest Expense (\$92,608 X 11%) .....	10,187	
	Cash (\$100,000 X 9%) .....		9,000
	Bond Discount .....		1,187
(3)	Bonds Payable .....	100,000	
	Loss on Extinguishment of Bonds .....	5,888	
	Cash (\$100,000 X 101%) .....		101,000
	Bond Discount (\$7,392 – \$1,187 – \$1,317*) .....		4,888

$$*[(\$92,608 + \$1,187) \times 11\%] - \$9,000$$

30. As indicated in the Convergence Corner of Chapter 2, the IASB and FASB are working on a conceptual framework project, part of which will examine the definition of a liability. In addition, this project will address the difference in measurements used between IFRS and U.S. GAAP for contingent liabilities.

## SOLUTIONS TO BRIEF EXERCISES

### BRIEF EXERCISE 14-1

Present value of the principal		
\$500,000 X .37689.....	\$188,445	
Present value of the interest payments		
\$22,500 X 12.46221 .....	<u>280,400</u>	
Issue price.....		<u>\$468,845</u>

### BRIEF EXERCISE 14-2

(a)	Cash.....	300,000	
	Bonds Payable .....		300,000
(b)	Interest Expense.....	15,000	
	Cash (€300,000 X 10% X 6/12).....		15,000
(c)	Interest Expense.....	15,000	
	Interest Payable .....		15,000

### BRIEF EXERCISE 14-3

(a)	Cash (€300,000 X 1.0811).....	324,330	
	Bonds Payable .....		324,330
(b)	Interest Expense (€324,330 X 8% X 6/12).....	12,973	
	Bonds Payable .....	2,027	
	Cash (€300,000 X 10% X 6/12).....		15,000
(c)	Interest Expense		
	(€324,330 – €2,027) X 8% X 6/12 .....	12,892	
	Bonds Payable .....	2,108	
	Interest Payable .....		15,000

### BRIEF EXERCISE 14-4

(a)	Cash ( $\text{€}300,000 \times .926393$ ) .....	277,918	
	Bonds Payable .....		277,918
(b)	Interest Expense ( $\text{€}277,918 \times 12\% \times 6/12$ ).....	16,675	
	Bonds Payable .....		1,675
	Cash ( $\text{€}300,000 \times 10\% \times 6/12$ ) .....		15,000
(c)	Interest Expense		
	( $\text{€}277,918 + \text{€}1,675$ ) $\times 12\% \times 6/12$ ) .....	16,776	
	Bonds Payable .....		1,776
	Interest Payable .....		15,000

### BRIEF EXERCISE 14-5

(a)	Cash .....	408,000	
	Bonds Payable .....		400,000
	Interest Expense		
	( $\text{£}400,000 \times 6\% \times 4/12 = \text{£}8,000$ ).....		8,000
(b)	Interest Expense .....	12,000	
	Cash ( $\text{£}400,000 \times 6\% \times 6/12 = \text{£}12,000$ ).....		12,000
(c)	Interest Expense .....	12,000	
	Interest Payable .....		12,000

### BRIEF EXERCISE 14-6

(a)	Cash .....	559,224	
	Bonds Payable .....		559,224
(b)	Interest Expense ( $\text{\$}559,224 \times 8\% \times 6/12$ ).....	22,369	
	Cash ( $\text{\$}600,000 \times 7\% \times 6/12$ ) .....		21,000
	Bonds Payable .....		1,369

### BRIEF EXERCISE 14-6 (Continued)

(c)	Interest Expense		
	[( $\$560,593 \times 8\% \times 6/12 = \$22,424$ )].....	22,424	
	Interest Payable .....		21,000
	Bonds Payable .....		1,424

### BRIEF EXERCISE 14-7

(a)	Cash.....	644,636,000	
	Bonds Payable .....		644,636,000

(b)	Interest Expense.....	19,339,000	
	Bonds Payable .....	1,661,000	
	Cash .....		21,000,000
	( $\$644,636 \times 6\% \times 6/12 = \$19,339,000$ )		
	( $\$600,000 \times 7\% \times 6/12 = \$21,000,000$ )		

(c)	Interest Expense		
	( $\$642,975 \times 6\% \times 6/12 = \$19,289$ ) .....	19,289	
	Bonds Payable .....	1,711	
	Interest Payable .....		21,000

### BRIEF EXERCISE 14-8

Interest Expense .....	6,446,360*	
Bonds Payable .....	553,640	
Interest Payable.....		7,000,000**

\* $\text{HK}\$644,636,000 \times 6\% \times 2/12 = \text{HK}\$6,446,360$

\*\* $\text{HK}\$600,000,000 \times 7\% \times 2/12 = \text{HK}\$7,000,000$

### BRIEF EXERCISE 14-9

(a)	Cash .....	100,000	
	Notes Payable .....		100,000
(b)	Interest Expense .....	10,000	
	Cash (\$100,000 X 10% = \$10,000) .....		10,000

### BRIEF EXERCISE 14-10

(a)	Cash .....	47,664	
	Notes Payable .....		47,664
(b)	Interest Expense .....	5,720	
	Notes Payable .....		5,720
	(\$47,664 X 12%)		

### BRIEF EXERCISE 14-11

(a)	Computer .....	31,495	
	Notes Payable .....		31,495
(b)	Interest Expense .....	3,779	
	Cash .....		2,000
	Notes Payable .....		1,779
	(\$31,495 X 12% = \$3,779)		
	(\$40,000 X 5% = \$2,000)		

### BRIEF EXERCISE 14-12

	Cash .....	60,000	
	Notes Payable .....		38,131
	Unearned Revenue		
	[\$60,000 – (\$60,000 X .63552) = \$21,869] .....		21,869

**BRIEF EXERCISE 14-13**

Bonds Payable .....	515,000	
Gain on Redemption of Bonds .....		20,000
Cash .....		495,000

**BRIEF EXERCISE 14-14**

Notes Payable .....	100,000	
Share Capital—Ordinary .....		20,000
Share Premium—Ordinary		
(\$4.75 – \$1) X 20,000 .....		75,000
Gain on Extinguishment of Debt .....		5,000

**BRIEF EXERCISE 14-15**

(a) Present value of restructured cash flows:

Present value of principal \$90,000 due in 4 years at 12% (\$90,000 X .63552) .....	\$ 57,197
Present value of interest \$7,200 paid annually for 4 years at 12% (\$7,200 X 3.03735).....	<u>21,869</u>
Fair value of note.....	<u>\$ 79,066</u>

Notes Payable (Old).....	100,000	
Gain on Extinguishment of Debt .....		20,934
Note Payable (New).....		79,066

(b) Interest Expense.....	9,488*	
Cash (\$90,000 X 8%) .....		7,200
Note Payable .....		2,288

\*\$79,066 X 12%

### BRIEF EXERCISE 14-16

(a)	Unrealized loss = \$17,500 – \$16,000 = <u>\$1,500</u>		
(b)	Unrealized Holding Gain or Loss—Income.....	1,500	
	Note Payable.....		1,500

### BRIEF EXERCISE 14-17

Non-current liabilities		
Bonds Payable, due January 1, 2019.....		\$1,912,000
Current liabilities		
Bond Interest Payable.....		\$ 80,000

## SOLUTIONS TO EXERCISES

### EXERCISE 14-1 (15–20 minutes)

- (a) Current liability if current assets are used to satisfy the debt.
- (b) Current liability, \$250,000; long-term liability, \$750,000.
- (c) Current liability.
- (d) Probably non-current, although if operating cycle is greater than one year and current assets are used, this item would be classified as current.
- (e) Current liability.
- (f) Current liability unless (a) a fund for liquidation has been accumulated which is not classified as a current asset or (b) arrangements have been made for refinancing.
- (g) Current liability.
- (h) Current liability.

### EXERCISE 14-2 (15–20 minutes)

- (a) Interest expense (credit balance)—Reclassify to interest payable on statement of financial position.
- (b) Bond Issue Costs—Reduction of the issue amount of the bond payable.
- (c) Gain on repurchase of debt—Classify as part of Other income and expense on the income statement.
- (d) Mortgage payable—Classify one-third as current liability and the remainder as long-term liability on statement of financial position.
- (e) Debenture bonds payable—Classify as long-term liability on statement of financial position.
- (f) Notes payable—Classify as long-term liability on statement of financial position.
- (g) Income bonds payable—Classify as long-term liability on statement of financial position.



### EXERCISE 14-3 (15–20 minutes)

#### 1. Divac Company:

(a)	1/1/10	Cash.....	300,000	
		Bonds Payable .....		300,000
(b)	7/1/10	Interest Expense (€300,000 X 9% X 3/12) .....	6,750	
		Cash.....		6,750
(c)	12/31/10	Interest Expense.....	6,750	
		Interest Payable .....		6,750

#### 2. Verbitsky Company:

(a)	6/1/10	Cash.....	210,000	
		Bonds Payable .....		200,000
		Interest Expense (€200,000 X 12% X 5/12) .....		10,000
(b)	7/1/10	Interest Expense.....	12,000	
		Cash (€200,000 X 12% X 6/12) ...		12,000
(c)	12/31/10	Interest Expense.....	12,000	
		Interest Payable .....		12,000

**Note to instructor:** Some students may credit Interest Payable on 6/1/10. If they do so, the entry on 7/1/10 will have a debit to Interest Payable for €10,000 and a debit to Interest Expense for €2,000.

**EXERCISE 14-4 (15–20 minutes)**

(a)	1/1/11	Cash (\$800,000 X 1.19792).....	958,336	
		Bonds Payable.....		958,336
(b)	7/1/11	Interest Expense		
		(\$958,336 X 8% X 6/12).....	38,333	
		Bonds Payable .....	1,667	
		Cash (\$800,000 X 10% X 6/12).....		40,000
(c)	12/31/11	Interest Expense		
		(\$958,336 – \$1,667) X 8% X 6/12 .....	38,267	
		Bonds Payable .....	1,733	
		Interest Payable.....		40,000

**EXERCISE 14-5 (15–20 minutes)**

(a)	1/1/11	Cash (\$800,000 X .8495).....	679,600	
		Bonds Payable .....		679,600
(b)	7/1/11	Interest Expense		
		(\$679,600 X 12% X 1/2).....	40,776	
		Bonds Payable.....		776
		Cash (\$800,000 X 10% X 6/12).....		40,000
(c)	12/31/11	Interest Expense		
		[(679,600 + 776) X 12% X 1/2].....	40,823	
		Bonds Payable.....		823
		Interest Payable.....		40,000

### EXERCISE 14-6 (15–20 minutes)

The effective-interest or yield rate is 12%. It is determined through trial and error using Table 6-2 for the discounted value of the principal (£1,702,290) and Table 6-4 for the discounted value of the interest (£1,081,434); £1,702,290 plus £1,081,434 equals the proceeds of £2,783,724. (A financial calculator may be used to determine the rate of 12%.)

#### Schedule of Discount Amortization Effective-Interest Method (12%)

Year	Cash Paid	Interest Expense	Discount Amortized	Carrying Amount of Bonds
(1)	(2)	(3)	(4)	
Jan. 1, 2010	—	—	—	£2,783,724.00
Dec. 31, 2010	£300,000	£334,046.88*	£34,046.88	2,817,770.88
Dec. 31, 2011	300,000	338,132.51	38,132.51	2,855,903.39
Dec. 31, 2012	300,000	342,708.41	42,708.41	2,898,611.80
Dec. 31, 2013	300,000	347,833.42	47,833.42	2,946,445.22
Dec. 31, 2014	300,000	353,554.78**	53,554.78	3,000,000.00

\*£334,046.88 = £2,783,724 X .12.

\*\*Rounded.

### EXERCISE 14-7 (15–20 minutes)

(a) Bond selling price (\$2,500,000 X 1.06231)..... \$ 2,655,775

July 1, 2010

Interest expense reported (\$2,655,775 X 10% X 6/12) ..... \$ 132,789

December 31, 2010

Interest expense reported

[(\$2,500,000 X .11 X 6/12) X 10% X 6/12]..... \$ 132,553\*

\*(\$2,655,775 – \$132,789)

**EXERCISE 14-7 (Continued)**

<b>(b)</b>	<b>June 30, 2010</b>	
	Carrying amount of bonds.....	<b>\$562,500</b>
	Effective-interest rate for the period from June 30 to October 31, 2010 (.10 X 4/12) .....	<u><b>X.033333</b></u>
	Interest expense to be recorded on October 31, 2010 .....	<u><b>\$ 18,750*</b></u>

\*Alternative computation:  $\$562,500 \times .10 \times 4/12$

<b>(c)</b>	<b>October 1, 2010</b>	
	Cash ( $\$853,382 + \$72,000$ ).....	<b>925,382</b>
	Bonds payable .....	<b>853,382</b>
	Bond Interest Expense ( $\$800,000 \times 12\% \times 9/12$ ).....	<b>72,000</b>

	<b>December 31, 2010</b>	
	Bond Interest Expense.....	<b>93,335</b>
	Bonds Payable .....	<b>2,665*</b>
	Cash ( $\$800,000 \times 12\%$ ) .....	<b>96,000</b>

\* $(\$800,000 \times 12\%) - \$72,000 = \$24,000$  net cash paid  
(21,335) interest expense  
 $\$853,382 \times 10\% \times 3/12$   
\$2,665 premium amortized

**EXERCISE 14-8 (20–30 minutes)**

(a)	(1)	<b>June 30, 2010</b>		
		Cash.....	5,376,150	
		Bonds Payable .....		5,376,150
	(2)	<b>December 31, 2010</b>		
		Interest Expense		
		(\$5,376,150 X 12% X 6/12) .....	322,569	
		Bonds Payable .....	2,431	
		Cash		
		(\$5,000,000 X 13% X 6/12).....		325,000
	(3)	<b>June 30, 2011</b>		
		Interest Expense		
		[(\$5,376,150 – \$2,431)		
		X 12% X 6/12] .....	322,423	
		Bonds Payable .....	2,577	
		Cash .....		325,000
	(4)	<b>December 31, 2011</b>		
		Interest Expense		
		[(\$5,376,150 – \$2,431 –		
		\$2,577) X 12% X 6/12] .....	322,268	
		Bonds Payable .....	2,732	
		Cash .....		325,000

**EXERCISE 14-8 (Continued)**

**(b) Non-current Liabilities:**

**Bonds payable, 13% (due on June 30, 2030)..... \$5,368,410\***

**\*\$5,376,150 – (\$2,431 + \$2,577 + \$2,732) = \$5,368,410**

<b>(c) (1) Interest expense for the period from January 1 to June 30, 2011 from (a) 3. ....</b>	<b>\$ 322,423</b>
<b>Interest expense for the period from July 1 to December 31, 2011 from (a) 4. ....</b>	<b><u>322,268</u></b>
<b>Amount of bond interest expense reported for 2011 .....</b>	<b><u>\$ 644,691</u></b>
<b>(2) Total interest to be paid for the bond (\$5,000,000 X 13% X 20) .....</b>	<b>\$13,000,000</b>
<b>Less: Premium .....</b>	<b><u>376,150</u></b>
<b>Total cost of borrowing over the life of the bond .....</b>	<b><u>\$12,623,850</u></b>

**EXERCISE 14-9 (15–20 minutes)**

(a) January 1, 2010

Cash .....	860,651.79	
Bonds Payable.....		860,651.79

(b) **Schedule of Interest Expense and Bond Premium Amortization**  
**Effective-Interest Method**  
**12% Bonds Sold to Yield 10%**

Date	Cash Paid	Interest Expense	Premium Amortized	Carrying Amount of Bonds
1/1/10	—	—	—	£860,651.79
12/31/10	£96,000.00	£86,065.18	£ 9,934.82	850,716.97
12/31/11	96,000.00	85,071.70	10,928.30	839,788.67
12/31/12	96,000.00	83,978.87	12,021.13	827,767.54

(c) December 31, 2010

Interest Expense .....	86,065.18	
Bonds Payable .....	9,934.82	
Cash .....		96,000.00

(d) December 31, 2012

Interest Expense .....	83,978.87	
Bonds Payable .....	12,021.13	
Cash .....		96,000.00

**EXERCISE 14-10 (20–30 minutes)**

	<u>Unsecured Bonds</u>	<u>Zero-Coupon Bonds</u>	<u>Mortgage Bonds</u>
(1) Maturity value	\$10,000,000	\$25,000,000	\$15,000,000
(2) Number of interest periods	40	10	10
(3) Stated rate per period	3.25% ( $\frac{13\%}{4}$ )	0	10%
(4) Effective rate per period	3% ( $\frac{12\%}{4}$ )	12%	12%
(5) Payment amount per period	\$325,000 <sup>(a)</sup>	0	\$ 1,500,000 <sup>(b)</sup>
(6) Present value	\$10,577,900 <sup>(c)</sup>	\$8,049,250 <sup>(d)</sup>	\$13,304,880 <sup>(e)</sup>

<sup>(a)</sup>\$10,000,000 X 13% X 1/4 = \$325,000

<sup>(b)</sup>\$15,000,000 X 10% = \$1,500,000

<sup>(c)</sup>Present value of an annuity of \$325,000 discounted at 3% per period for 40 periods (\$325,000 X 23.11477)..... \$ 7,512,300  
 Present value of \$10,000,000 discounted at 3% per period for 40 periods (\$10,000,000 X .30656)..... 3,065,600  
\$10,577,900

<sup>(d)</sup>Present value of \$25,000,000 discounted at 12% for 10 periods (\$25,000,000 X .32197)..... \$ 8,049,250

<sup>(e)</sup>Present value of an annuity of \$1,500,000 discounted at 12% for 10 periods (\$1,500,000 X 5.65022)..... \$ 8,475,330  
 Present value of \$15,000,000 discounted at 12% for 10 years (\$15,000,000 X .32197)..... 4,829,550  
\$13,304,880



**EXERCISE 14-11 (15–20 minutes)**

	<b>January 1, 2011</b>		
<b>(a) 1.</b>	<b>Land .....</b>	<b>300,000</b>	
	<b>Notes Payable .....</b>		<b>300,000</b>
	<b>(The \$300,000 capitalized land cost represents the present value of the note discounted for five years at 11%.)</b>		
<b>2.</b>	<b>Equipment.....</b>	<b>297,079*</b>	
	<b>Notes Payable .....</b>		<b>297,079</b>
	<b>*Computation of the present value of the note:</b>		
	<b>Present value of \$400,000 due in 8 years at 11%—</b>		
	<b>\$400,000 X .43393 .....</b>		<b>\$173,572</b>
	<b>Present value of \$24,000 payable annually for 8 years at 11% annually—</b>		
	<b>\$24,000 X 5.14612 .....</b>		<b>123,507</b>
	<b>Present value of the note</b>		<b><u>\$297,079</u></b>
<b>(b) 1.</b>	<b>Interest Expense .....</b>	<b>33,000</b>	
	<b>Notes Payable</b>		
	<b>(\$300,000 X .11) .....</b>		<b>33,000</b>
<b>2.</b>	<b>Interest Expense</b>		
	<b>(\$297,079 X .11) .....</b>	<b>32,679</b>	
	<b>Notes Payable .....</b>		<b>8,679</b>
	<b>Cash (\$400,000 X .06) .....</b>		<b>24,000</b>

**EXERCISE 14-12 (15–20 minutes)**

(a)	Face value of the zero-interest-bearing note.....	\$600,000
	Discounting factor (12% for 3 periods).....	X .71178
	Amount to be recorded for the land at January 1, 2011 .....	<u>\$427,068</u>
	Carrying value of the note at January 1, 2011.....	\$427,068
	Applicable interest rate (12%).....	X .12
	Interest expense to be reported in 2011.....	<u>\$ 51,248</u>

(b)	January 1, 2011	
	Cash .....	4,000,000
	Notes Payable.....	2,732,040
	Unearned Revenue .....	1,267,960*

\*\$4,000,000 – (\$4,000,000 X .68301) = \$1,267,960

Carrying value of the note	
at January 1, 2011 .....	\$2,732,040
Applicable interest rate (10%).....	X .10
Interest expense to be	
reported for 2011 .....	<u>\$ 273,204</u>

**EXERCISE 14-13 (15–20 minutes)**

(a)	Cash .....	500,000
	Notes Payable.....	396,915
	Unearned Revenue	
	(\$500,000 – \$396,915) .....	103,085

Face value .....	\$500,000
Present value of 1 at 8%	
for 3 years .....	X .79383
Present value.....	<u>\$396,915</u>

### EXERCISE 14-13 (Continued)

(b) Interest Expense ( $\$396,915 \times 8\%$ ).....	31,753*	
Notes Payable .....		31,753*
 Unearned Revenue ( $\$103,085 \div 3$ ) .....	34,362*	
Sales.....		34,362*

\*Rounded

### EXERCISE 14-14 (20–25 minutes)

(a) Present value of the principal:		
$\$1,500,000 \times .35218$ .....		\$ 528,270
Present value of the interest payments:		
$(\$1,500,000 \times 10\%) \times 5.88923$ .....		<u>883,385</u>
Present value (selling price) of the bonds .....		<u>\$1,411,655</u>

(b) **AMORTIZATION SCHEDULE**  
10-Year, 10% Bonds Sold to Yield 11%

Date	Cash Paid	Interest Expense	Discount Amortized	Carrying Amount of Bonds
1/2/07	—	—	—	\$1,411,655
12/31/07	\$150,000	\$155,282	\$5,282	1,416,937
12/31/08	150,000	155,863	5,863	1,422,800
12/31/09	150,000	156,508	6,508	1,429,308
12/31/10	150,000	157,224	7,224	1,436,532
12/31/11	150,000	158,019	8,019	1,444,551

(c) Bonds Payable		
$(\$1,429,308 \times \$1,000,000/\$1,500,000)$ .....	952,872	
Loss on Extinguishment of Bonds .....	57,128	
Cash ( $\$1,000,000 \times 101\%$ ) .....		1,010,000

**EXERCISE 14-15 (12–16 minutes)**

<b>(a)</b>	<b>June 30, 2011</b>		
	Bonds Payable (\$600,000 – \$78,979) .....	521,021	
	Loss on Extinguishment of Bonds .....	102,979	
	Cash.....		624,000
	Reacquisition price (\$600,000 X 104%).....		\$ 624,000
	Net carrying amount of bonds redeemed:		
	(\$600,000 – \$78,979) .....		<u>(521,021)</u>
	Loss on extinguishment.....		<u>\$ 102,979</u>
	Cash (\$800,000 X 112.5513%) .....	900,410	
	Bonds Payable .....		900,410
<b>(b)</b>	<b>December 31, 2011</b>		
	Interest Expense .....	22,510*	
	Bonds Payable.....	1,490	
	Cash.....		24,000**
	*(\$900,410 X 5% X 6/12)		
	**(.03 X \$800,000 = \$24,000)		

**EXERCISE 14-16 (10–15 minutes)**

Reacquisition price (¥5,000,000 X 104%) .....		¥5,200,000
Less: Net carrying amount of bonds redeemed:		
Par value .....	¥5,000,000	
Unamortized discount .....	<u>(100,000)</u>	<u>4,900,000</u>
Loss on redemption .....		<u>¥ 300,000</u>
Bonds Payable .....	4,900,000	
Loss on Extinguishment of Bonds .....	300,000	
Cash .....		5,200,000
(To record extinguishment of bonds payable)		
Cash (¥5,000,000 X 103%) .....	5,015,000	
Bonds Payable .....		5,015,000
(To record issuance of new bonds)		

**EXERCISE 14-17 (15–20 minutes)**

**(a) Transfer of property on December 31, 2010:**

**Strickland Company (Debtor):**

Note Payable .....	200,000	
Interest Payable .....	18,000	
Accumulated Depreciation—Machine .....	221,000	
Machine .....		390,000
Gain on Disposition of Machine .....		11,000 <sup>a</sup>
Gain on Extinguishment of Debt .....		38,000 <sup>b</sup>

<sup>a</sup>\$180,000 – (\$390,000 – \$221,000) = \$11,000.

<sup>b</sup>(\$200,000 + \$18,000) – \$180,000 = \$38,000.

**(b) “Gain on Disposition of Machine” and the “Gain on Extinguishment of Debt” should be reported under Other income and expense in the income statement.**

**(c) Granting of equity interest on December 31, 2010:**

**Strickland Company (Debtor):**

Note Payable .....	200,000	
Interest Payable .....	18,000	
Share Capital—Ordinary .....		150,000
Share Premium—Ordinary .....		30,000
Gain on Extinguishment of Debt .....		38,000

### EXERCISE 14-18 (25–30 minutes)

- (a) Yes, Barkley can record a gain on extinguishment equal to the difference between the note's carrying value and the fair value of the restructured note.

The note's fair value is computed as follows:

Present value of restructured cash flows:

Present value of principal £2,400,000 due in 3 years at 15% .....	£1,578,048 <sup>a</sup>
Present value of interest £240,000 paid annually for 3 years at 15% .....	<u>547,975<sup>b</sup></u>
Fair value of note .....	<u>£2,126,023</u>

<sup>a</sup>£2,400,000 X .65752 = £1,578,048.

<sup>b</sup>£240,000 X 2.28323 = £547,975.

- (b) The amortization schedule is prepared as follows:

**BARKLEY COMPANY**  
**Amortization Schedule After Debt Modification**  
**Market-Interest Rate 15%**

Date	Cash Paid (10%)	Interest Expense (15%)	Amortization	Carrying Value
12/31/10	—	—	—	£2,126,023
12/31/11	£240,000 <sup>a</sup>	£318,903 <sup>b</sup>	£ 78,903 <sup>c</sup>	2,204,926
12/31/12	240,000	330,739	90,739	2,295,665
12/31/13	<u>240,000</u>	<u>344,335<sup>*</sup></u>	<u>104,335</u>	2,400,000
<b>Total</b>	<u>£720,000</u>	<u>£993,977</u>	<u>£273,977</u>	

<sup>a</sup>£2,400,000 X 10% = £240,000.

<sup>b</sup>£2,126,023 X 15% = £318,903.

<sup>c</sup>£318,903 – £240,000 = £78,903.

\*Rounded £15.

**EXERCISE 14-18 (Continued)**

(c) Interest payment entry for Barkley Company is:

<b>December 31, 2012</b>		
Interest Expense .....	330,739	
Note Payable.....		90,739
Cash.....		240,000

(d) The payment entry at maturity is:

<b>January 1, 2014</b>		
Note Payable.....	2,400,000	
Cash .....		2,400,000

**EXERCISE 14-19 (20–30 minutes)**

(a) The note's fair value can be calculated as follows:

Present value of restructured cash flows:

Present value of principal £1,900,000

due in 3 years at 15% ..... £1,249,288<sup>a</sup>

Present value of interest £190,000

paid annually for 3 years at 15% ..... 433,814<sup>b</sup>

Fair value of note ..... £1,683,102

<sup>a</sup>£1,900,000 X .65752 = £1,249,288

<sup>b</sup>£190,000 X 2.28323 = £433,814

<b>December 31, 2010</b>		
Note Payable (Old).....	1,900,000	
Gain on Extinguishment of Debt.....		216,898
Note Payable (New) .....		1,683,102



## EXERCISE 14-19 (Continued)

(b) The amortization schedule is prepared as follows:

**BARKLEY COMPANY**  
**Amortization Schedule After Debt Modification**  
**Market-Interest Rate 15%**

Date	Cash Paid (10%)	Interest Expense (15%)	Amortization	Carrying Value
12/31/10	—	—	—	£1,683,102
12/31/11	£190,000 <sup>a</sup>	£252,465 <sup>b</sup>	£ 62,465 <sup>c</sup>	1,745,567
12/31/12	190,000	261,835	71,835	1,817,402
12/31/13	<u>190,000</u>	<u>272,598</u>	<u>82,598</u>	1,900,000
Total	<u>£570,000</u>	<u>£786,898</u>	<u>£216,898</u>	

<sup>a</sup>£1,900,000 X 10% = £190,000.

<sup>b</sup>£1,683,102 X 15% = £252,465.

<sup>c</sup>£252,465 – £190,000 = £62,465.

**EXERCISE 14-19 (Continued)**

**(c) Interest payment entries for Barkley Company are:**

<b>December 31, 2011</b>		
Interest Expense .....	<b>252,465</b>	
Note Payable.....		<b>62,465</b>
Cash.....		<b>190,000</b>

<b>December 31, 2012</b>		
Interest Expense .....	<b>261,835</b>	
Note Payable.....		<b>71,835</b>
Cash.....		<b>190,000</b>

<b>December 31, 2013</b>		
Interest Expense .....	<b>272,598</b>	
Note Payable.....		<b>82,598</b>
Cash.....		<b>190,000</b>

**(d) The payment entry at maturity is:**

<b>January 1, 2014</b>		
Note Payable.....	<b>1,900,000</b>	
Cash.....		<b>1,900,000</b>

### EXERCISE 14-20 (15–20 minutes)

(a) **Gottlieb Co.'s entry:**

Note Payable .....	199,800	
Property .....		90,000
Gain on Disposition of Property (€140,000 – €90,000) .....		50,000
Gain on Extinguishment of Debt .....		59,800*

\*€199,800 – €140,000.

(b) **Present value of restructured cash flows:**

Present value of \$220,000 due in 2 years at 8%, interest payable annually (Table 6-2); (\$220,000 X .85734) .....		\$188,615
Present value of \$11,000 interest payable annually for 2 years at 8% (Table 6-4); (\$11,000 X 1.78326) .....		<u>19,616</u>
Fair value of note .....		<u>\$208,231</u>

**Vargo Corp.'s entries:**

2010 Note Payable (Old) .....	270,000	
Gain on Extinguishment of Debt .....		61,769
Note Payable (New) .....		208,231
2011 Interest Expense (\$208,231 X 8%) .....	16,658	
Note Payable .....		5,658
Cash (5% X \$220,000) .....		11,000
2012 Interest Expense [(\$208,231 + \$5,658) X .08] .....	17,111	
Note Payable .....	213,889	
Cash [\$220,000 + (5% X \$220,000)] .....		231,000

**EXERCISE 14-21 (10–15 minutes)**

(a) **December 31, 2010**  
**No entry since the carrying value is equal to the notes' fair value.**

<b>December 31, 2011</b>		
Note Payable.....	1,500	
Unrealized Holding Gain or Loss—Income .....		1,500

<b>December 31, 2012</b>		
Unrealized Holding Gain or Loss—Income .....	3,500	
Note Payable [(€38,000 – €36,000) + €1,500].....		3,500

- (b) **The note will be reported at €42,500 on Fallen's 2011 statement of financial position.**
- (c) **Fallen's 2012 income is €3,500 lower since the change in fair value is reported as part of net income.**
- (d) **Fallen's creditworthiness has declined since the fair value of its debt declined. Since the general market interest rates have been stable, the fair value decline must have been caused by a decline in Fallen's creditworthiness.**

## EXERCISE 14-22 (10–15 minutes)

At December 31, 2010, disclosures would be as follows:

Maturities and sinking fund requirements on long-term debt are as follows:

2011	\$	0	
2012		2,500,000	
2013		4,500,000	(\$2,000,000 + \$2,500,000)
2014		8,500,000	(\$6,000,000 + \$2,500,000)
2015		2,500,000	

## TIME AND PURPOSE OF PROBLEMS

### **Problem 14-1** (Time 15–20 minutes)

**Purpose**—to provide the student with the opportunity to interpret a bond amortization schedule. This problem requires both an understanding of the function of such a schedule and the relevance of each of the individual numbers. The student is to prepare journal entries to reflect the information given in the bond amortization schedule.

### **Problem 14-2** (Time 25–30 minutes)

**Purpose**—to provide the student with an understanding of how to make the journal entry to record the issuance of bonds. In addition, a portion of the bonds are retired and therefore a bond amortization schedule has to be prepared.

### **Problem 14-3** (Time 20–30 minutes)

**Purpose**—to provide the student with an understanding of how interest rates can be used to deceive a customer. The problem is challenging because for the first year of this transaction, negative amortization results.

### **Problem 14-4** (Time 40–50 minutes)

**Purpose**—to provide the student with an opportunity to explain what the effective-interest method is, why it is required, and how it is computed. As one part of the problem, an amortization schedule must be prepared.

### **Problem 14-5** (Time 15–25 minutes)

**Purpose**—to provide the student with an opportunity to become familiar with the application of **IFRS**, involving the exchange of notes for cash or property, goods, or services. This problem requires the preparation of the necessary journal entries concerning the exchange of a zero-interest-bearing long-term note for a computer, and the necessary adjusting entries relative to depreciation and amortization. The student should construct the relevant Schedule of Note Discount Amortization to support the respective entries.

### **Problem 14-6** (Time 20–25 minutes)

**Purpose**—to provide the student with an opportunity to become familiar with the application of **IFRS**, involving the exchange of a note, which is payable in equal installments, for machinery. This problem requires the preparation of the necessary journal entries concerning the exchange and the annual payments and interest. A Schedule of Note Discount Amortization should be constructed to support the respective entries.

### **Problem 14-7** (Time 15–20 minutes)

**Purpose**—to provide the student with an understanding of the relevant journal entries which are necessitated when there is a bond issuance and bond retirement. This problem also provides an opportunity for the student to learn the footnote disclosure required.

### **Problem 14-8** (Time 50–65 minutes)

**Purpose**—to provide the student with an understanding of the relevant journal entries which are necessitated for a bond issuance. This problem involves two independent bond issuances with the assumption that one is sold at a discount and the other at a premium, both utilizing the effective-interest method. This comprehensive problem requires preparing journal entries for the issuance of bonds, related interest payments and amortization (with the construction of amortization tables where applicable), and the retirement of part of the bonds.

## Time and Purpose of Problems (Continued)

### **Problem 14-9** (Time 20–25 minutes)

Purpose—to provide the student with an understanding of the relevant journal entries which are necessitated when there is a bond issuance and bond retirement. This problem requires preparing journal entries for the issuance of bonds, related interest payments and amortization, and the retirement of part of the bonds.

### **Problem 14-10** (Time 20–25 minutes)

Purpose—to provide the student with a series of transactions from bond issuance, payment of bond interest, accrual of bond interest, amortization of bond discount, and bond retirement. Journal entries are required for each of these transactions.

### **Problem 14-11** (Time 15–25 minutes)

Purpose—to provide the student with a debt modification situation that requires computation of the debtor's gain on restructure, entries to recognize the gain and discussion of IFRS relating to this situation.

### **Problem 14-12** (Time 30–45 minutes)

Purpose—to provide the student with three independent and different restructured debt situations where gains must be computed and journal entries recorded on the books of the debtor.

### **Problem 14-13** (Time 40–50 minutes)

Purpose—to provide the student with a complex debt modification situation that requires two amortization schedules, computation of loss on restructure, and entries at different times on the debtor's books.

### **Problem 14-14** (Time 20–25 minutes)

Purpose—to provide the student with an understanding of a number of areas related to bonds. Specifically, the classification of bonds, determination of cash received with accrued interest, and disclosure requirements.

## SOLUTIONS TO PROBLEMS

### PROBLEM 14-1

(a) The bonds were sold at a discount of \$5,651. Evidence of the discount is the January 1, 2004 book value of \$94,349, which is less than the maturity value of \$100,000 in 2013.

(b) The stated rate is 11% ( $\$11,000 \div \$100,000$ ). The effective rate is 12% ( $\$11,322 \div \$94,349$ ).

(c) January 1, 2004

Cash .....	94,349	
Bonds Payable .....		94,349

(d) December 31, 2004

Interest Expense .....	11,322	
Bonds Payable .....		322
Interest Payable .....		11,000

(e) January 1, 2011 (Interest Payment)

Interest Payable.....	11,000	
Cash.....		11,000

December 31, 2011

Interest Expense .....	11,712	
Bonds Payable .....		712
Interest Payable .....		11,000



**PROBLEM 14-2**

(a)	<b>Present value of the principal</b> \$2,000,000 X .38554 (PV <sub>10, 10%</sub> ) .....	\$ 771,080
	<b>Present value of the interest payments</b> \$210,000* X 6.14457 (PVOA <sub>10, 10%</sub> ).....	<u>1,290,360</u>
	<b>Present value (selling price of the bonds) .....</b>	<u>\$2,061,440</u>
	* <b>\$2,000,000 X 10.5% = \$210,000</b>	
	Cash .....	2,061,440
	Bonds Payable.....	2,061,440

(b)		<b>Cash</b>	<b>Interest</b>	<b>Premium</b>	<b>Carrying</b>
	<b>Date</b>	<b>Paid</b>	<b>Expense</b>	<b>Amortization</b>	<b>Amount of</b>
					<b>Bonds</b>
	1/1/09	—	—	—	\$2,061,440
	1/1/10	\$210,000	\$206,144	\$3,856	2,057,584
	1/1/11	210,000	205,758	4,242	2,053,342
	1/1/12	210,000	205,334	4,666	2,048,676
	1/1/13	210,000	204,868	5,132	2,043,544

(c)	<b>Carrying amount as of 1/1/12.....</b>	\$2,048,676
	<b>Less: Amortization of bond premium</b> (5,132 ÷ 2).....	<u>2,566</u>
	<b>Carrying amount as of 7/1/12.....</b>	<u>\$2,046,110</u>
	<b>Reacquisition price.....</b>	\$1,065,000
	<b>Carrying amount as of 7/1/12</b> (\$2,046,110 ÷ 2) .....	<u>(1,023,055)</u>
	<b>Loss .....</b>	<u>\$ 41,945</u>

**PROBLEM 14-2 (Continued)**

**Entry for accrued interest**

Interest Expense ( $\$204,868 \times 1/2 \times 1/2$ ).....	51,217	
Bonds Payable.....	1,283	
Cash ( $\$210,000 \times 1/2 \times 1/2$ ).....		52,500

**Entry for reacquisition**

Bonds Payable.....	1,023,055*	
Loss on Extinguishment of Bonds .....	41,945	
Cash.....		1,065,000

\*Premium as of 7/1/12 to be written off  
 $(\$2,046,110 - \$2,000,000) \times 1/2 = \$23,055$

The loss is reported as other income and expense.

<b>PROBLEM 14-3</b>
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(a)

Date	Cash Paid	Interest Expense	Discount Amortized	Carrying Amount of Note
1/1/10	—	—	—	€32,000
4/1/10	€400	€640	€240	32,240
7/1/10	400	645	245	32,485
10/1/10	400	650	250	32,735
1/1/11	400	655	255	32,990

(b) At this point, we see that the customer owes €32,990, or €990 more than at the beginning of the year.

(c) To earn 8% over the next two years the quarterly payments must be €4,503 computed as follows:

$$€32,990 \div 7.32548 (PVOA_{8, 2\%}) = €4,503$$

(d)

Date	Cash Paid	Interest Expense	Discount Amortized	Carrying Amount of Note
1/1/11	—	—	—	€32,990
4/1/11	€4,503	€660	€3,843	29,147
7/1/11	4,503	583	3,920	25,227
10/1/11	4,503	505	3,998	21,229
1/1/12	4,503	425	4,078	17,151
4/1/12	4,503	343	4,160	12,991
7/1/12	4,503	260	4,243	8,748
10/1/12	4,503	175	4,328	4,420
1/1/13	4,503	83*	4,420	0

\*rounded up €5

(e) The new sales gimmick may bring people into the showroom the first time but will drive them away once they learn of the amount of their year 2 and year 3 payments. Many will not have budgeted for these increases, and will be in a bind because they owe more on their car than it's worth. One should question the ethics of a dealer using this tactic.

**PROBLEM 14-4**

Dear Samantha,

When a bond is issued at face value, the annual interest expense and the interest payout equals the face value of the bond times the interest rate stated on its face. However, if the bond is issued to yield a higher or lower interest rate than what is stated on its face, the interest expense and the actual interest payout will differ. Labeled as a discount or premium respectively, this difference in interest must be systematically associated with the interest periods which occur over the bond's life through a process called amortization.

Assume a premium: the theory behind the effective-interest method is that, as time passes, the difference between the face value of the bond and its carrying amount becomes smaller, resulting in a lower interest expense every period. (The carrying amount equals the face value of the bond plus any unamortized portion of the premium.) Because the carrying amount of the bond becomes smaller over time, the interest expense also does. Since the stated interest rate remains constant, the resulting difference between the actual interest payout and the interest expense recognized must be reflected when interest expense is recorded for the period.

To amortize the premium applying this method to the data provided, you must know the bond's face amount, its stated rate of interest, its effective rate of interest, and its carrying value.

1. Multiply the stated rate times the face amount. This is the interest payout.
2. Multiply the bond's carrying amount by the effective rate which gives you the actual interest expense.

### PROBLEM 14-4 (Continued)

3. Subtract the amount calculated in #2 above from that found in #1. This is the amount to be amortized for the period.
4. Subtract the difference computed in #3 from the carrying amount. The process begins all over when you apply the effective rate to this new carrying amount for the following period.

The schedule below illustrates this calculation. The face value (\$2,000,000) is multiplied by the stated rate of 11 percent, while the carrying amount (\$2,171,600) is multiplied by the effective rate of 10 percent. Because this bond pays interest semiannually, you must also multiply these amounts by 6/12. The result is the interest payout of \$110,000 and interest expense of \$108,580. The difference (\$1,420) is amortized, lowering the carrying amount of the bond to \$2,170,180. For the next period, this new carrying amount will be multiplied by the effective rate times 6/12 and subtracted from the constant \$110,000. Obviously this time the interest expense will be lower than it was last period, resulting in a greater amount of amortization in the next period.

Follow these steps and you should have no trouble amortizing premiums and discounts over the life of a bond.

Sincerely,

#### Attachment to letter

**HOBART COMPANY**  
**Interest and Discount Amortization Schedule**  
**11% Bond Issued to Yield 10%**

Date	Cash Paid (11%)	Interest Expense (10%)	Premium Amortized	Carrying Amount of Bond
6-30-10	—	—	—	\$2,171,600
12-31-10	\$110,000	\$108,580	\$1,420	2,170,180
6-30-11	110,000	108,509	1,491	2,168,689
12-31-11	110,000	108,434	1,566	2,167,123
6-30-12	110,000	108,356	1,644	2,165,479

**PROBLEM 14-5**

<b>(a)</b>	<b>December 31, 2010</b>		
	Computer .....	409,806.00	
	Notes Payable.....		409,806.00
	(Computer capitalized at the present value of the note—\$600,000 X .68301)		

<b>(b)</b>	<b>December 31, 2011</b>		
	Depreciation Expense .....	67,961.20	
	Accumulated Depreciation—Computer [(\$409,806 – \$70,000) ÷ 5] .....		67,961.20
	Interest Expense .....	40,980.60	
	Notes Payable.....		40,980.60

**Schedule of Note Discount Amortization**

Date	Debit, Interest Expense Credit, Notes Payable	Carrying Amount of Note
12/31/10	—	\$409,806.00
12/31/11	\$40,980.60	450,786.60
12/31/12	45,078.66	495,865.26
12/31/13	49,586.53	545,451.79
12/31/14	54,548.21*	600,000.00

\*3.03 adjustment due to rounding.

<b>(c)</b>	<b>December 31, 2012</b>		
	Depreciation Expense .....	67,961.20	
	Accumulated Depreciation—Computer .....		67,961.20
	Interest Expense .....	45,078.66	
	Notes Payable.....		45,078.66

**PROBLEM 14-6**

(a)	12/31/09	Machinery.....	182,485.20*
		Cash .....	50,000.00
		Notes Payable .....	132,485.20
		*To record machinery at the present value of the note plus the immediate cash payment: PV of \$40,000 annuity @ 8% for 4 years (\$40,000 X 3.31213) .....	
			\$132,485.20
		Down payment.....	50,000.00
		Capitalized value of Machinery.....	<u>\$182,485.20</u>
(b)	12/31/10	Notes Payable.....	40,000.00
		Cash .....	40,000.00
		Interest Expense .....	10,598.82
		Notes Payable .....	10,598.82

**Schedule of Note Discount Amortization**

Date	Cash Paid	Interest Expense	Amortization	Carrying Amount of Note
12/31/09	—	—	—	\$132,485.20
12/31/10	\$40,000.00	\$10,598.82	\$29,401.18	103,084.02*
12/31/11	40,000.00	8,246.72	31,753.28	71,330.74
12/31/12	40,000.00	5,706.46	34,293.54	37,037.20
12/31/13	40,000.00	2,962.80**	37,037.20	—

\*\$103,084.02 = \$132,485.20 – \$29,401.18.

\*\*\$0.18 adjustment due to rounding.

**PROBLEM 14-6 (Continued)**

(c)	12/31/11	Notes Payable .....	40,000.00	
		Cash.....		40,000.00
		Interest Expense .....	8,246.72	
		Notes Payable .....		8,246.72
(d)	12/31/12	Notes Payable .....	40,000.00	
		Cash.....		40,000.00
		Interest Expense .....	5,706.46	
		Notes Payable .....		5,706.46
(e)	12/31/13	Notes Payable .....	40,000.00	
		Cash.....		40,000.00
		Interest Expense .....	2,962.80	
		Notes Payable .....		2,962.80



**PROBLEM 14-7**

- (a) **Entry to record the issuance of the 11% bonds on December 18, 2010:**

Cash (¥40,000,000 X 102%) .....	40,800,000	
Bonds Payable.....		40,800,000

- Entry to record the retirement of the 9% bonds on January 2, 2011:**

Bonds Payable (¥30,000,000 – ¥1,842,888) .....	28,157,112	
Loss on Extinguishment of Bonds .....	3,042,888	
Cash (¥30,000,000 X 104%).....		31,200,000

[The loss represents the excess of the cash paid (¥31,200,000) over the carrying amount of the bonds (¥28,157,112).]

- (b) **The loss is reported as an Other income and expense item.**

**Note 1. Loss on Bond Extinguishment**

The loss represents a loss of ¥3,042,888 from the extinguishment and retirement of ¥30,000,000 of the Company's outstanding bond issue due in 2021. The funds used to purchase the mortgage bonds represent a portion of the proceeds from the sale of ¥40,000,000 of 11% debenture bonds issued December 18, 2010 and due in 2030.

**PROBLEM 14-8**

**1. Sanford Co.**

<b>3/1/10</b>	<b>Cash .....</b>	<b>472,090*</b>	
	<b>Bonds Payable .....</b>		<b>472,090</b>
	<b>*Present value of \$500,000 due in 7 periods at 6%</b>		
	<b>(\$500,000 X .66506) .....</b>		<b>\$332,530</b>
	<b>Present value of interest payable semiannually</b>		
	<b>(\$25,000 X 5.58238) .....</b>		<b>139,560</b>
	<b>Proceeds from sale of bonds .....</b>		<b><u>\$472,090</u></b>
<b>9/1/10</b>	<b>Interest Expense .....</b>	<b>28,325*</b>	
	<b>Bonds Payable .....</b>		<b>3,325</b>
	<b>Cash .....</b>		<b>25,000</b>
	<b>(See amortization table on next page)</b>		
<b>12/31/10</b>	<b>Interest Expense .....</b>	<b>19,017</b>	
	<b>Bonds Payable</b>		
	<b>(\$3,525 X 4/6) .....</b>		<b>2,350</b>
	<b>Interest Payable (\$25,000 X 4/6) .....</b>		<b>16,667</b>
<b>3/1/11</b>	<b>Interest Expense .....</b>	<b>9,508</b>	
	<b>Interest Payable .....</b>	<b>16,667</b>	
	<b>Bonds Payable</b>		
	<b>(\$3,525 X 2/6) .....</b>		<b>1,175</b>
	<b>Cash .....</b>		<b>25,000</b>
<b>9/1/11</b>	<b>Interest Expense .....</b>	<b>28,736</b>	
	<b>Bonds Payable .....</b>		<b>3,736</b>
	<b>Cash .....</b>		<b>25,000</b>
<b>12/31/11</b>	<b>Interest Expense .....</b>	<b>19,308</b>	
	<b>Bonds Payable</b>		
	<b>(\$3,961 X 4/6) .....</b>		<b>2,641</b>
	<b>Interest Payable .....</b>		<b>16,667</b>

**PROBLEM 14-8 (Continued)**

**Schedule of Bond Discount Amortization  
Effective-Interest Method  
10% Bonds Sold to Yield 12%**

Date	Cash Paid	Interest Expense	Discount Amortized	Carrying Amount of Bonds
3/1/10	—	—	—	\$472,090
9/1/10	\$25,000	\$28,325	\$3,325	475,415
3/1/11	25,000	28,525	3,525	478,940
9/1/11	25,000	28,736	3,736	482,676
3/1/12	25,000	28,961	3,961	486,637
9/1/12	25,000	29,198	4,198	490,835
3/1/13	25,000	29,450	4,450	495,285
9/1/13	25,000	29,715*	4,715	500,000

\*Rounded \$2.

**2. Titania Co.**

6/1/10	Cash.....	425,853	
	Bonds Payable.....		425,853
	<b>Present value of \$400,000 due in 8 periods at 5%</b> (\$400,000 X .67684).....		\$270,736
	<b>Present value of interest payable semiannually</b> (\$24,000 X 6.46321).....		<u>155,117</u>
	<b>Proceeds from sale of bonds.....</b>		<u>\$425,853</u>
12/1/10	Interest Expense.....	21,293*	
	Bonds Payable .....	2,707	
	Cash (\$400,000 X .12 X 6/12) .....		24,000
	(See amortization table on Page 14–50)		
12/31/10	Interest Expense (\$21,157 X 1/6) .....	3,526	
	Bonds Payable		
	(\$2,843 X 1/6) .....	474	
	Interest Payable (\$24,000 X 1/6).....		4,000

**PROBLEM 14-8 (Continued)**

6/1/11	Interest Expense (\$21,157 X 5/6).....	17,631	
	Interest Payable.....	4,000	
	Bonds Payable		
	(\$2,843 X 5/6).....	2,369	
	Cash.....		24,000

10/1/11	Interest Expense		
	(\$21,015 X .3* X 4/6) .....	4,203	
	Bonds Payable		
	(\$2,985 X .3 X 4/6) .....	597	
	Cash.....		4,800

\*\$120,000 ÷ \$400,000 = .3

10/1/11	Bonds Payable.....	125,494	
	Gain on Extinguishment of Bonds ....		4,294*
	Cash.....		121,200

*Reacquisition price		
\$126,000 – (\$120,000 X 12% X 4/12)		\$121,200
Net carrying amount of bonds redeemed:		
(\$420,303* X .30) – \$597 .....		<u>(125,494)</u>
Gain on extinguishment .....		<u>\$ (4,294)</u>

\*From amortization table on page 14–53

12/1/11	Interest Expense (\$21,015 X .7*) .....	14,711	
	Bonds Payable (\$2,985 X .7).....	2,089	
	Cash (\$24,000 X .7) .....		16,800

\*(\$400,000 – \$120,000) ÷ \$400,000 = .7

12/31/11	Interest Expense (\$20,866 X .7 X 1/6) .....	2,434	
	Bonds Payable (\$3,134 X .7 X 1/6).....	366	
	Interest Payable		
	(\$24,000 X .7 X 1/6) .....		2,800

**PROBLEM 14-8 (Continued)**

6/1/12	Interest Expense ( $\$20,866 \times .7 \times 5/6$ ).....	12,172	
	Interest Payable .....	2,800	
	<b>Bonds Payable</b>		
	( $\$3,134 \times .7 \times 5/6$ ).....	1,828	
	Cash ( $\$24,000 \times .7$ ).....		16,800
12/1/12	Interest Expense ( $\$20,709 \times .7$ ).....	14,496	
	<b>Bonds Payable</b>		
	( $\$3,291 \times .7$ ).....	2,304	
	Cash ( $\$24,000 \times .7$ ).....		16,800

<u>Date</u>	<u>Cash Paid</u>	<u>Interest Expense</u>	<u>Premium Amortized</u>	<u>Carrying Amount of Bonds</u>
6/1/10	—	—	—	\$425,853
12/1/10	\$24,000	\$21,293	\$2,707	423,146
6/1/11	24,000	21,157	2,843	420,303
12/1/11	24,000	21,015	2,985	417,318
6/1/12	24,000	20,866	3,134	414,184
12/1/12	24,000	20,709	3,291	410,893
6/1/13	24,000	20,545	3,455	407,438
12/1/13	24,000	20,372	3,628	403,810
6/1/14	24,000	20,190*	3,810	400,000

\*\$.50 adjustment due to rounding.

**PROBLEM 14-9**

**July 1, 2010**

<b>Cash</b>		
	$(\$900,000 \times 1.19219) + (\$900,000 \times 12\% \times 6/12) ..$	<b>1,126,971.00</b>
	<b>Bonds Payable</b> .....	<b>1,072,971.00</b>
	<b>Interest Expense</b> ( $\$900,000 \times 12\% \times 6/12$ ).....	<b>54,000.00</b>

**December 31, 2010**

<b>Interest Expense</b> ( $\$900,000 \times 12\%$ ).....		<b>108,000.00</b>
	<b>Interest Payable</b> .....	<b>108,000.00</b>
<b>Bonds Payable</b> .....		<b>351.45</b>
<b>Interest Expense</b>		
$[(\$108,000 - \$54,000) -$		
$(\$1,072,971 \times 10\% \times 6/12)]$ .....		<b>351.45</b>

**January 1, 2011**

<b>Interest Payable</b> .....		<b>108,000.00</b>
	<b>Cash</b> .....	<b>108,000.00</b>

**January 2, 2011**

<b>Bonds Payable</b> .....		<b>429,047.82*</b>
	<b>Cash</b> ( $\$360,000 \times 102\%$ ) .....	<b>367,200.00</b>
	<b>Gain on Extinguishment of Bonds</b> .....	<b>61,847.82</b>

\* $[(\$360,000 \div \$900,000) \times (\$1,072,971 - \$351.45)]$ .

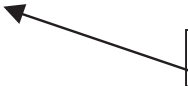
<b>Reacquisition price</b>		
	$(\$360,000 \times 102\%)$ .....	<b>\$367,200.00</b>
<b>Net carrying value of bonds redeemed:</b>		
	$(\$1,072,971 - \$351.45) \times (\$360,000 \div \$900,000)$ .....	<u><b>(429,047.82)</b></u>
<b>Gain on redemption</b> .....		<u><b>\$ (61,847.82)</b></u>

**PROBLEM 14-9 (Continued)**

<b>December 31, 2011</b>		
<b>Interest Expense (\$540,000 X .12).....</b>	<b>64,800.00</b>	
<b>Interest Payable .....</b>		<b>64,800.00</b>
<b>Bonds Payable .....</b>	<b>442.83</b>	
<b>Interest Expense</b>		
[(\$1,072,971 – \$351.45 –		
\$429,047.82) X .10] – \$64,800 .....		<b>442.83</b>

**PROBLEM 14-10**

(a)	4/1/10	Cash .....	13,967,634*			
		Bonds Payable .....			13,967,634	
		*Present value of Rs15,000,000 due in 30 periods at 6% (Rs15,000,000 X .17411) .....				Rs 2,611,650
		Present value of interest payable Semiannually (Rs825,000 X 13.76483) .....				<u>11,355,984</u>
					<u>Rs13,967,634</u>	
(b)	10/1/10	Bond Interest Expense .....	838,058*			
		Cash .....			825,000**	
		Bonds Payable .....			13,058	
		*Rs13,967,634 X .12 X 6/12 = Rs838,058				
		**Rs15,000,000 X .11 X 6/12 = Rs825,000				
(c)	12/31/10	Bond Interest Expense .....	419,421*			
		Interest Payable .....			412,500	
		Bonds Payable .....			6,921	
		*(Rs13,967,634 + Rs13,058) X .12 X 3/12				
(d)	4/1/11	Interest Payable .....	412,500			
		Bond Interest Expense .....	419,628*			
		Cash .....			825,000**	
		Bonds Payable .....			7,128	
		*Rs15,000,000 X .11 X 6/12				
		**Rs13,987,613 X .12 X 3/12				


Au: Is it correct. Pls confirm

**NOTE: All bondholders are paid on April 1**



## PROBLEM 14-10 (Continued)

The reacquisition price: 200,000 shares X Rs31 = Rs6,200,000.

The loss on extinguishment of the bonds is:

Reacquisition price.....	Rs6,200,000
Less: Carrying amount	
(Rs13,987,613 + Rs7,128) X 40%.....	<u>5,597,896</u>
Loss .....	<u>Rs 602,104</u>

The entry to record extinguishment of the bonds is:

<b>April 2, 2011</b>	
Bonds Payable.....	5,597,896
Loss on Extinguishment of Bonds .....	602,104
Share Capital—Ordinary .....	2,000,000
Share Premium—Ordinary .....	4,200,000

**PROBLEM 14-11**

(a) It is an extinguishment of debt with modification of terms.

(b)	Note Payable (Old) .....	600,000	
	Gain on Extinguishment of Debt .....		301,123*
	Note Payable (New) .....		298,877

\*Calculation of gain.

Pre-restructure carrying amount.....		\$600,000
Present value of restructured cash flows:		
Present value of \$600,000 due in 10 years at 15%, interest payable annually (Table 6-2); (\$600,000 X .24719).....	\$148,314	
Present value of \$30,000 interest payable annually for 10 years at 15% (Table 6-4); (\$30,000 X 5.01877).....	<u>150,563</u>	<u>(298,877)</u>
Debtor's gain on extinguishment.....		<u>\$301,123</u>

**PROBLEM 14-12**

<b>(a)</b>	<b>Note Payable</b> .....	<b>5,000,000</b>	
	<b>Share Capital—Ordinary</b> .....		<b>1,700,000</b>
	<b>Share Premium—Ordinary</b> .....		<b>2,000,000</b>
	<b>Gain on Extinguishment of Debt</b> .....		<b>1,300,000</b>
	<b>Carrying amount of debt</b> .....	<b>5,000,000</b>	
	<b>Fair value of equity</b> .....	<b><u>(3,700,000)</u></b>	
	<b>Gain on extinguishment</b>		
	<b>of debt</b> .....		<b><u>\$1,300,000</u></b>
<b>(b)</b>	<b>Note Payable</b> .....	<b>5,000,000</b>	
	<b>Land</b> .....		<b>3,250,000</b>
	<b>Gain on Disposition of Real Estate</b> .....		<b>750,000</b>
	<b>Gain on Extinguishment of Debt</b> .....		<b>1,000,000</b>
	<b>Fair value of land</b> .....	<b>\$4,000,000</b>	
	<b>Book value of land</b> .....	<b><u>(3,250,000)</u></b>	
	<b>Gain on disposition of</b>		
	<b>real estate</b> .....		<b><u>\$ 750,000</u></b>
	<b>Note payable (carrying</b>		
	<b>amount)</b> .....	<b>\$5,000,000</b>	
	<b>Fair value of land</b> .....	<b><u>(4,000,000)</u></b>	
	<b>Gain on extinguishment</b>		
	<b>of debt</b> .....		<b><u>\$1,000,000</u></b>

**PROBLEM 14-12 (Continued)**

(c)	Note Payable (Old) .....	5,000,000	
	Gain on Extinguishment of Debt .....		1,712,400*
	Note Payable (New) .....		3,287,600

\*Calculation of gain.

Pre-restructure carrying amount .....	\$ 5,000,000
Less: Present value of restructured cash flows:	
Present value of \$5,000,000 due in	
3 years at 12% (Table 6-2);	
(\$5,000,000 X .65752) .....	<u>3,287,600</u>
Debtor's gain on extinguishment.....	<u>\$ 1,712,400</u>

**\*PROBLEM 14-13**

**(a) Present value of restructured cash flows:**

Present value of principal \$300,000 due in 3 years at 12% ( $\$300,000 \times .71178$ ) .....	<b>\$213,534</b>
Present value of interest \$30,000 paid annually for 3 years at 12% ( $\$30,000 \times 2.40183$ ) .....	<u><b>72,055</b></u>
<b>Fair value of note .....</b>	<u><b>\$285,589</b></u>

**AMORTIZATION SCHEDULE AFTER DEBT MODIFICATION  
MARKET INTEREST RATE 12%**

Date	Cash Paid	Interest Expense	Amortization	Carrying Value
12/31/10	—	—	—	\$285,589
12/31/11	\$ 30,000	\$34,271*	\$ 4,271	289,860
12/31/12	30,000	34,783	4,783	294,643
12/31/13	30,000	35,357	5,357	300,000

\*\$34,271 = \$285,589 X 12%.

**\*PROBLEM 14-13 (Continued)**

(b)

**December 31, 2010**

Interest Payable .....	33,000	
Note Payable (Old) .....	300,000	
Gain on Extinguishment of Debt .....		47,411*
Note Payable (New) .....		285,589

\*( $\$300,000 + \$33,000$ ) –  $\$285,589$

**December 31, 2011**

Interest Expense .....	34,271	
Note Payable .....		4,271
Cash .....		30,000

**December 31, 2012**

Interest Expense .....	34,783	
Note Payable .....		4,783
Cash .....		30,000

<b>PROBLEM 14-14</b>
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(a) **Langley Co.**

Carrying amount of the bonds on 1/1/10 .....	\$656,992
Effective-interest rate (10%).....	<u>X 0.10</u>
Interest expense to be reported for 2010.....	<u>\$ 65,699</u>

(b) **Tweedie Building Co.**

Maturities and sinking fund requirements on long-term debt for the next five year are as follows:

2011	\$400,000	2014	\$200,000
2012	350,000	2015	350,000
2013	200,000		

(c) **Beckford Inc.**

Since the three bonds reported by Beckford Inc. are secured by either real estate, securities of other corporations, or plant equipment, none of the bonds are classified as debenture bonds.

## TIME AND PURPOSE OF CONCEPTS FOR ANALYSIS

### CA 14-1 (Time 25–30 minutes)

Purpose—to provide the student with some familiarity with the economic theory which relates to the accounting for a bond issue. The student is required to discuss the conceptual merits for each of the three different statement of financial position presentations for the same bond issue, and the merits for utilizing the nominal rate versus the effective rate at date of issue in the computation of the carrying value of the obligations arising from a bond issue.

### CA 14-2 (Time 10–15 minutes)

Purpose—to provide the student with an understanding of the various accounts which are generated in a bond issue and their proper classifications on the statement of financial position. Justification must be provided for the treatment accorded these accounts in relation to the specifics of this case.

### CA 14-3 (Time 15–25 minutes)

Purpose—this case includes discussions of the determination of the selling price of bonds, presentation of items related to bonds on the statement of financial position and the income statement, whether discount amortization increases or decreases, and how an early retirement of bonds should be reported on the income statement.

### CA 14-4 (Time 20–25 minutes)

Part I—Purpose—to provide the student with an understanding of the use of the effective-interest method of amortization.

Part II—Purpose—to provide the student with some familiarity with the various methods of accounting for gains and losses from the early extinguishment of debt, and the justifications for each of the different methods.

### CA 14-5 (Time 20–30 minutes)

Purpose—the student is asked to explain project financing arrangements, take-or-pay contracts, off-balance-sheet financing, and the conditions for which a contractual obligation is to be disclosed as an unconditional purchase obligation. The case also requires the student to determine accounting treatment for a project financing arrangement.

### CA 14-6 (Time 20–30 minutes)

Purpose—to provide the student with an opportunity to examine the ethical issues related to the issue of bonds.



# SOLUTIONS TO CONCEPTS FOR ANALYSIS

## CA 14-1

- (a) 1. This is a common statement of financial position presentation and has the advantage of being familiar to users of financial statements. The total of \$1,085,800 is the objectively determined exchange price at which the bonds were issued. It represents the fair value of the bond obligations given. Thus, this is in keeping with the usual accounting practice of using exchange prices as a primary source of data.
2. This presentation indicates the dual nature of the bond obligations. There is an obligation to make periodic payments of \$55,000 and an obligation to pay the \$1,000,000 at maturity. The amounts presented on the statement of financial position are the present values of each of the future obligations discounted at the initial effective rate of interest.

The proper emphasis is placed upon the accrual concept, that is, that interest accrues through the passage of time. The emphasis upon premiums and discounts is eliminated.

3. This presentation shows the total liability which is incurred in a bond issue, but it ignores the time value of money. This would be a fair presentation of the bond obligations only if the effective-interest rate were zero.
- (b) When an entity issues interest-bearing bonds, it normally accepts two types of obligations: (1) to pay interest at regular intervals and (2) to pay the principal at maturity. The investors who purchase Nichols Company bonds expect to receive \$55,000 each January 1 and July 1 through January 1, 2031 plus \$1,000,000 principal on January 1, 2031. Since this (\$55,000) is more than the 10% per annum (\$50,000 semiannually) that the investors would be willing to accept on an investment of \$1,000,000 in these bonds, they are willing to bid up the price—to pay a premium for them. The amount that the investors should be willing to pay for these future cash flows depends upon the interest rate that they are willing to accept on their investment(s) in this security.

The amount that the investors are willing to pay (and the issuer is willing to accept), \$1,085,800, is the present value of the future cash flows discounted at the rate of interest that they will accept.

Another way of viewing this is that the \$1,085,800 is the amount which, if invested at an annual interest rate of 10% compounded semiannually, would allow withdrawals of \$55,000 every six months from July 1, 2011 through January 1, 2031 and \$1,000,000 on January 1, 2031.

Even when bonds are issued at their maturity value, the price paid coincides with the maturity value because the coupon rate is equal to the effective rate. If the bonds had been issued at their maturity value, the \$1,000,000 would be the present value of future interest and principal payments discounted at an annual rate of 11% compounded semiannually.

Here the effective rate of interest is less than the coupon rate, so the price of the bonds is greater than the maturity value. If the effective rate of interest was greater than the coupon rate, the bonds would sell for less than the maturity value.

- (c) 1. The use of the coupon rate for discounting bond obligations would give the face value of the bond at January 1, 2011, and at any interest-payment date thereafter. Although the coupon rate is readily available while the effective rate must be computed, the coupon rate may be set arbitrarily at the discretion of management so that there would be little or no support for accepting it as the appropriate discount rate.

## CA 14-1 (Continued)

2. The effective-interest rate at January 1, 2011 is the market rate to Nichols Company for long-term borrowing. This rate gives a discounted value for the bond obligations, which is the amount that could be invested at January 1, 2011 at the market rate of interest. This investment would provide the sums needed to pay the recurring interest obligation plus the principal at maturity. Thus, the effective-interest rate is objectively determined and verifiable.

The market or yield rate of interest at the date of issue should be used throughout the life of the bond because it reflects the interest obligation which the issuer accepted at the time of issue. The resulting value at the date of issue was the current value at that time and is similar to historical cost. Also, this yield rate is objectively determined in an exchange transaction.

The continued use of the issue-date yield rate results in a failure to reflect whether the burden is too high or too low in terms of the changes which may have taken place in the interest rate.

- (d) Using a current yield rate produces a current value, that is, the amount which could currently be invested to produce the desired payments. When the current yield rate is lower than the rate at the issue date (or than at the previous valuation date), the liabilities for principal and interest would increase. When the current yield is higher than the rate at the issue date (or at the previous valuation date), the liabilities would decrease. Thus, holding gains and losses could be determined. If the debt is held until maturity, the total of the interest expense and the holding gains and losses under this method would equal the total interest expense using the yield rate at issue date.

## CA 14-2

1. Use of the asset requires a depreciation charge in each year of use. This in turn requires carrying the equipment as an asset. The company has contracted to purchase the equipment and, thus, has a real liability which affects financial condition and must be shown.
2. The obligation of a company is to its bondholders, not to the trustee. Until the bondholders have received payment, the company still has a liability.

**(Note to instructor:** The student may have difficulty with this statement because this type of situation was not discussed in the chapter. It therefore provides an opportunity to emphasize that payment to an agent or trustee does not constitute payment of the liability for bond interest. When the trustee dispenses the funds to bondholders, the liability should be reduced. A separate Bond Interest Fund account is established at the time payment is made to the trustee.)

## CA 14-3

- (a) 1. The selling price of the bonds would be the present value of all of the expected net future cash outflows discounted at the effective annual interest rate (yield) of 11 percent. The present value is the sum of the present value of its maturity amount (face value) plus the present value of the series of future semiannual interest payments.
2. Immediately after the bond issue is sold, the current asset, cash, would be increased by the proceeds from the sale of the bond issue. A non-current liability, bonds payable, would be presented in the statement of financial position at the face value of the bonds net of the discount.

## CA 14-3 (Continued)

- (b) The following item related to the bond issue would be included in Sealy's 2011 income statement:

Interest expense would be included for ten months (March 1, 2011, to December 31, 2011) at an effective-interest rate (yield) of 11 percent. This is composed of the nominal interest of 9 percent adjusted for the amortization of the related bond discount. Bond discount should be amortized using the effective-interest method over the period the bonds will be outstanding, that is, the period from the date of sale (March 1, 2011) to the maturity date (March 1, 2016).

- (c) The amount of bond discount amortization would be lower in the second year of the life of the bond issue. The effective-interest method of amortization uses a uniform interest rate based upon a changing carrying value which results in increasing amortization each year when there is a bond discount.
- (d) The retirement of the bonds would result in a loss from extinguishment of debt that should be included in the determination of net income and classified as an Other income and expense item.

## CA 14-4

### *Part I.*

Before the effective-interest method of amortization can be used, the effective yield or interest rate of the bond must be computed. The effective yield rate is the interest rate that will discount the two components of the debt instrument to the amount received at issuance. The two components in the value of a bond are the present value of the principal amount due at the end of the bond term and the present value of the annuity represented by the periodic interest payments during the life of the bond. Interest expense using the interest method is based upon the effective yield or interest rate multiplied by the carrying value of the bond (par value adjusted for unamortized premium or discount). The amount of amortization is the difference between recognized interest expense and the interest actually paid (par value multiplied by the nominal rate). When a premium is being amortized, the dollar amount of the periodic amortization will increase over the life of the instrument. This is due to the decreasing carrying value of the bond instrument multiplied by the constant effective-interest rate, which is subtracted from the amount of cash interest paid. In the case of a discount, the dollar amount of the periodic amortization will increase over the life of the bond. This is due to the increasing carrying value of the bond instrument multiplied by the constant effective-interest rate from which is subtracted the amount of cash interest paid.

## CA 14-4 (Continued)

### Part II.

- (a) 1. **Gain or loss to be amortized over the remaining life of old debt.** The basic argument supporting this method is that if refunding is done to obtain debt at a lower cash outlay (interest cost), then the gain or loss is truly a cost of obtaining the reduction in cash outlay. As such, the new rate of interest alone does not reflect the cost of the new debt, but a portion of the gain or loss on the extinguishment of the old instrument must be matched with the nominal interest to reflect the true cost of obtaining the new debt instrument. This argument states that this matching must continue for the unexpired life of the old debt in order to reflect the true nature of the transaction and cost of obtaining the new debt instrument.
2. **Gain or loss to be amortized over the life of the new debt instrument.** This argument states that the gain or loss from early extinguishment of debt actually affects the cost of obtaining a new debt instrument. However, this method asserts that the effect should be matched with the interest expense of the new debt for the entire life of the new debt instrument. This argument is based on the assumption that the debt was refunded to take advantage of new lower interest rates or to avoid projected high interest rates in the future and that any gain or loss on early extinguishment should be reflected as an element of this decision and total interest cost over the life of the new instrument should be stated to reflect this decision.
3. **Gain or loss recognized in the period of extinguishment.** Proponents of this method state that the early extinguishment of debt to be refunded actually does not differ from other types of extinguishment of debt where the consensus is that any gain or loss from the transaction should be recognized in full in current net earnings. The early extinguishment of the debt is prompted for the same reason that other debt instruments are extinguished, namely, that the value of the debt instrument has changed in light of current financial circumstances and early extinguishment of the debt would produce the most favorable results. Also, it is argued that any gain or loss on the extinguishment is directly related to market interest fluctuations related to prior periods. If the true market interest rate had been known at the time of issuance, there would be no gain or loss at the time of extinguishment. Also, even if market interest rates were not known but the carrying value of the bond was periodically adjusted to market, any gain or loss would be reflected at the interim dates and not in a future period. The call premium paid on extinguishment and any unamortized premium or discount are actually adjustments to the actual effective-interest rate over the outstanding life of the bond. As such, any gain or loss on the early extinguishment of debt is related to prior-period valuation differences and should be recognized immediately.
- (b) The immediate recognition principle is the only acceptable method of reflecting gains or losses on the early extinguishment of debt, and these amounts, if material, must be reflected as other income and expense.

## CA 14-5

- (a) Such financing arrangements arise when (1) two or more entities form another entity to construct an operating plant that will be used by both parties; (2) the new entity borrows funds to construct the project and repays the debt from the proceeds received from the project; and (3) payment of the debt is guaranteed by the companies that formed the new entity.

## CA 14-5 (Continued)

- (b) In some cases, project financing arrangements become more formalized through the use of take-or-pay contracts or similar types of contracts. In a simple take-or-pay contract, a purchaser of goods signs an agreement with the seller to pay specified amounts periodically in return for products or services. The purchaser must make specified minimum payments even if delivery of the contracted products or services is not taken.
- (c) Ryan should not record the plant as its asset. The plant is to be constructed and operated by ACC. Although Ryan agrees to purchase all of the cans produced by ACC, Ryan does not have the property right to the plant, nor the right to use the plant.

Accounting for purchase commitments is unsettled and controversial. Some argue that these contracts should be reported as assets and liabilities at the time the contract is signed; others believe that our present recognition at the delivery date is most appropriate.

Note that a purchase commitment involves both an item that might be recorded as an asset and an item that might be recorded as a liability. That is, it involves both a right to receive assets and an obligation to pay . . . If both the right to receive assets and the obligation to pay were recorded at the time of the purchase commitment, the nature of the loss and the valuation account that records it when the price falls would be clearly seen.

Although the discussion does not exclude the possibility of recording assets and liabilities for purchase commitments, it contains no conclusions or implications about whether they should be recorded.

According to current practice, Ryan does not record an asset relating to the future purchase commitment. However, if the dollar amount involved is material, the details of the contract should be disclosed in a footnote to the statement of financial position. In addition, if the contracted price is in excess of the purchase market price and it is expected that losses will occur when the purchase is effected, losses should be recognized in the accounts in the period during which such declines in prices take place.

- (d) Off-balance-sheet financing is an attempt to borrow monies in such a way that the obligations are not recorded in a company's statement of financial position. The reasons for off-balance-sheet financing are many. First, many believe that removing debt or otherwise keeping it from the statement of financial position enhances the quality of the statement of financial position and permits credit to be obtained more readily and at less cost. Second, loan covenants often impose a limitation on the amount of debt a company may have. As a result, off-balance-sheet financing is used because these types of commitments might not be considered in computing the debt limitation. Third, it is argued by some that the asset side of the statement of financial position is severely understated because of the use of certain accounting methods (like accelerated depreciation methods). As an offset to these lower values, some believe that part of the debt does not have to be reported.

**Note to instructor:** Additional discussion of these type arrangements is presented in Appendix 17B related to variable interest entities.

## CA 14-6

- (a) The stakeholders in the Wichita case are:
  - Donald Lennon, president, founder, and majority shareholder.
  - Nina Friendly, minority shareholder.
  - Other minority shareholders.
  - Existing creditors (debt holders).
  - Future bondholders.
  - Employees, suppliers, and customers.

## CA 14-6 (Continued)

(b) The ethical issues:

The desires of the majority shareholder (Donald Lennon) versus the desires of the minority shareholders (Nina Friendly and others).

Doing what is right for the company and others versus doing what is best for oneself.

Questions:

Is what Donald wants to do legal? Is it unethical? Is Donald's action brash and irresponsible? Who may benefit/suffer if Donald arranges a high-risk bond issue? Who may benefit/suffer if Nina Friendly gains control of Wichita?

(c) The rationale provided by the student will be more important than the specific position because this is a borderline case with no *right* answer.

## FINANCIAL REPORTING PROBLEM

- (a) According to the maturity of borrowings note (Note 21), timing of cash flows are:

Within one year .....	£1,046.6
Between one and two years .....	203.7
Between two and five years .....	1,330.8
More than £5 years .....	<u>2,800.4</u>
	<u>£5,381.5</u>

- (b) (Amounts in £ millions)

1. Working capital = Current assets less current liabilities.

$$(\text{£}807.2) = \text{£}1,181.7 - \text{£}1,988.9$$

2. Acid-test ratio = 
$$\frac{\text{Cash} + \text{short-term investments} + \text{net receivables}}{\text{Current liabilities}}$$

$$.35 \text{ times} = \frac{\text{£}318.0 + \text{£}307.6 + \text{£}48.8 + \text{£}18.4}{\text{£}1,988.9}$$

3. Current ratio = 
$$\frac{\text{Current assets}}{\text{Current liabilities}}$$

$$.59 \text{ times} = \frac{\text{£}1,181.7}{\text{£}1,988.9}$$

M&S has a fairly weak liquidity position. The current ratio is below 1. The acid-test ratio is significantly below 1, possibly due to a slowing economy.

## FINANCIAL REPORTING PROBLEM (Continued)

The other ratio analysis below corroborates M&S's relatively weak financial position in 2008.

$$\begin{aligned}\text{Receivables turnover} &= \frac{\text{Net sales}}{\text{Average receivables}} \\ &= \frac{£9,022.0}{\frac{£196.7 + £307.6}{2}} \\ &= 35.78 \text{ times}\end{aligned}$$

$$\begin{aligned}\text{Inventory turnover} &= \frac{\text{Cost of goods sold}}{\text{Average inventory}} \\ &= \frac{£5,535.2}{\frac{£416.3 + £488.9}{2}} \\ &= 12.23 \text{ times}\end{aligned}$$

$$\begin{aligned}\text{Current cash debt coverage ratio} &= \frac{\text{Net cash provided by operating activities}}{\text{Average current liabilities}} \\ &= \frac{£1,069.8}{\frac{£1,606.2 + £1,988.9}{2}} \\ &= .60 \text{ times}\end{aligned}$$



## FINANCIAL REPORTING PROBLEM (Continued)

$$\begin{aligned}\text{Cash debt coverage ratio} &= \frac{\text{Net cash provided by operating activities}}{\text{Average total liabilities}} \\ &= \frac{\text{£1,069.8}}{\frac{\text{£3,732.8} + \text{£5,197.0}}{2}} \\ &= .24 \text{ times}\end{aligned}$$

$$\text{Debt to total assets} = \frac{\text{£5,197.0}}{\text{£7,161.0}} = .73$$

$$\begin{aligned}\text{Time interest earned} &= \frac{\text{Income before income taxes and interest expense}}{\text{Interest expense}} \\ &= \frac{\text{£821.0} + \text{£308.1} + \text{£146.6}}{\text{£146.6}} \\ &= 8.70 \text{ times}\end{aligned}$$

Similar to M&S's liquidity position, the company's solvency also appears weak. It has low coverage of its current and non-current liabilities. However, its interest coverage appears adequate. Industry and year-to-year comparisons should also be employed.

In summary, the analysis of liquidity and solvency is suggestive of weakened financial flexibility. It is likely that many companies are experiencing similar challenges in the wake of the recent general economic downturn.

## COMPARATIVE ANALYSIS CASE

**(a) Debt to total assets ratio:**

<b>Cadbury</b>	$\text{£}5,361/\text{£}8,895 = 60.3\%$
<b>Nestlé</b>	$\text{CHF}51,299/\text{CHF}106,215 = 48.3\%$

**Times interest earned ratio:**

<b>Cadbury</b>	$(\text{£}366 + \text{£}30 + \text{£}50) / \text{£}50 = 8.92 \text{ times}$
<b>Nestlé</b>	$(\text{CHF}19,051 + \text{CHF}3,787 + \text{CHF}1,247) / \text{CHF}1,247 = 19.3 \text{ times}$

The debt to total assets ratios of over 48% for both Cadbury and Nestlé show both companies to be highly leveraged, Cadbury more so than Nestlé. The times interest earned ratios show that interest expense is quite adequately covered by the firms' net income; Nestlé coverage is more than good; it is superb, especially considering the debt to total assets ratio of 48%.

	Carrying Value	Fair Value
<b>Cadbury</b>	£2,385	£2,387
<b>Nestlé</b>	N/A	N/A

The fair value will vary from the historical cost carrying value due to changes in interest rates.

**(c) Both Cadbury and Nestlé have debt issued in foreign countries. These companies may use foreign debt because**

1. Lower interest rates may be available in foreign countries.
2. Credit may be more readily available in foreign countries.

## **COMPARATIVE ANALYSIS CASE (Continued)**

**Using foreign debt to finance operations is subject to the risk of foreign currency exchange rate fluctuations. Both Cadbury and Nestlé enter into interest rate and foreign currency swaps to effectively change the interest rate and currency of specific debt issuances. These swaps are generally entered into concurrently with the issuance of the debt they are intended to modify.**

## FINANCIAL STATEMENT ANALYSIS CASE 1

### COMMONWEALTH EDISON CO.

- (a) Due to the markdown from 99.803 to 99.25, Commonwealth Edison would record a slightly larger discount and, of course, receive and record less cash. Amortization of the larger discount will result in a larger interest expense charge in each year the bonds are outstanding. As a result of the additional \$5.50 markdown, the effective-interest rate increased from 9.3% to 9.45%.
- (b) In the same *Wall Street Journal* article, the following explanation was provided for Commonwealth Edison's bond markdown and slow sale:

“Commonwealth had the misfortune to begin its giant offering only hours before investor sentiment was soured by the report last Thursday of a record increase in the nation's money supply. The monetary surge, plus a recent rebound in industrial productivity reported Friday, halted the market rally triggered in early May by signs of an economic slowdown and a peaking of interest rates.”

Other economic events that can and do affect the price of securities issued are:

1. A change in the Federal Reserve's lending rate.
2. A change in the bank prime rate.
3. A flood of other similar securities issues.
4. A good or poor earnings report for the issuer.
5. A change in the issuer's credit rating.
6. The issuance of a favorable or unfavorable broker's or other financial analysis.

## **FINANCIAL STATEMENT ANALYSIS CASE 1 (Continued)**

**Of course, noneconomic, political, or other world events can also affect the day-to-day sale of securities.**

**The “recent rebound in industrial productivity” mentioned in the article would normally not be a depressant on a securities issue; but because the financial community was anticipating, even hoping for, a recession to “cool off the economy” and, thus, lower the then existing high interest rates, the rebound represented a delay in the recession and the lowering of interest rates.**

## FINANCIAL STATEMENT ANALYSIS CASE 2

### PEPSICO

- (a) Answers will vary. The company may have decided to refinance in order to free cash needed for some other purpose, to reduce current cash needs, or to leave a credit line available for quick access.
- (b) The investor probably enjoys a higher interest rate than that obtained from other types of bonds. Also, a smaller initial investment is required.

Bonds Payable .....	780,000,000	
Cash .....		780,000,000

This bond would be listed in current liabilities in the year prior to the year of payment.

(c)

Cash [(\$250,000,000 X 1.02) + (\$95,000,000 X .99)].....	349,050,000	
Bonds Payable.....		349,050,000

OR the two bonds could be shown separately:

Cash .....	255,000,000	
Bonds Payable.....		255,000,000

and

Cash .....	94,050,000	
Bonds Payable.....		94,050,000

Possible reasons for the difference could be that the stated interest rate on the Australian bond was very attractive to Australian investors, therefore it sold at a premium; and the interest rate on the Italian bond was unattractive to Italian investors, so it sold at a discount.

## FINANCIAL STATEMENT ANALYSIS CASE 2 (Continued)

- (d) **Answers will vary. One advantage would be that it is a bond whose principal may not need to be paid in the foreseeable future.**

<b>Current Portion of Non-Current Debt .....</b>	<b>100,000,000</b>	
<b>Non-Current Debt .....</b>		<b>100,000,000</b>

**No journal entry is necessary to record the change in interest rate.**

## ACCOUNTING, ANALYSIS, AND PRINCIPLES

### ACCOUNTING

#### Bond calculations:

$$\begin{aligned}
 \text{PV of bonds at issuance} &= (\text{€}1,500 \times \text{PVF}_{10,6}) + (\text{€}1,500 \times 0.05 \times \text{PVF} - \text{OA}_{10,6}) \\
 &= (\text{€}1,500)(0.55839) + (\text{€}1,500)(0.05)(7.36009) \\
 &= \text{€}837.59 + \text{€}552.01 \\
 &= \text{€}1,389.60
 \end{aligned}$$

$$\text{Interest expense for 6 months ending 06/30/11} = (\text{€}1,426 \times 0.06) = \text{€}85.56$$

$$\text{Interest paid with cash} = (\text{€}1,500 \times 0.05) = \text{€}75.00$$

$$\begin{aligned}
 \text{Statement of financial position value at 06/30/11} &= \text{€}1,426 + \text{€}85.56 - \text{€}75.00 \\
 &= \text{€}1,436.56
 \end{aligned}$$

$$\text{Interest expense for 6 months ending 12/31/11} = (\text{€}1,436.56 \times 0.06) = \text{€}86.19$$

$$\text{Interest paid with cash} = \text{€}75.00$$

$$\begin{aligned}
 \text{Statement of financial position value at 12/31/11} &= \text{€}1,436.56 + \text{€}86.19 - \\
 &\quad \text{€}75.00 = \text{€}1,447.75
 \end{aligned}$$

#### BUGANT, INC. INCOME STATEMENT for the yeared ended 12/31/11

<b>Sales</b>		<b>€2,922</b>
<b>Expenses:</b>		
<b>COGS</b>	<b>1,900</b>	
<b>Salary Expense</b>	<b>700</b>	
<b>Depreciation Expense</b>	<b>80</b>	
<b>Interest Expense</b>	<b>172</b>	<b>2,852</b>
<b>Net Income</b>		<b>€ 70</b>

#### Income statement calculations:

$$\text{COGS} = \text{€}1,800 + \text{€}2,000 - \text{€}1,900 = \text{€}1,900$$

$$\text{Depreciation expense} = \text{€}2,000 \div 25 = \text{€}80$$

$$\text{Interest expense} = \text{€}85.56 + \text{€}86.19 = \text{€}171.75$$



## ACCOUNTING, ANALYSIS, AND PRINCIPLES (Continued)

### BUGANT, INC. STATEMENT OF FINANCIAL POSITION DECEMBER 31

	<u>2011</u>	<u>2010</u>		<u>2011</u>	<u>2010</u>
<b>Assets</b>			<b>Equity</b>		
Plant, and equip.	€2,000	€2,000	Share capital	€1,500	€1,500
Accumulated dep.	(240)	(160)	Retained earnings	1,134	1,164
Inventory	1,900	1,800	<b>Liabilities</b>		
Cash	<u>422</u>	<u>450</u>	Bonds payable	<u>1,448</u>	<u>1,426</u>
<b>Total Assets</b>	<u>€4,082</u>	<u>€4,090</u>	<b>Total equity &amp; liabilities</b>	<u>€4,082</u>	<u>€4,090</u>

#### Statement of financial position calculations:

$$\text{Cash} = €450 + €2,922 - €2,000 - €700 - €100 - €75 - €75 = €422$$

$$\text{Accumulated depreciation} = €160 + €80 = €240$$

$$\text{Retained earnings} = €1,164 + €70 - €100 = €1,134$$

### ANALYSIS

#### Debt-to-asset ratio:

2010:  $€1,426 \div €4,090 = 0.3487$  or 34.87 percent of Bugant's assets were financed with debt.

2011:  $€1,448 \div €4,082 = 0.3547$  or 35.47 percent.

#### Times interest earned ratio:

$$2010: (\€550 + \€169) \div \€169 = 4.25$$

$$2011: (\€70 + \€172) \div \€172 = 1.41$$

Less than half of Bugant's financing comes from debt, which is relatively low. In 2010, Bugant earned four-and-a-quarter times its interest expense. However, in 2011, the company's earnings fell considerably and it is now barely covering its interest charges. This would be cause for considerable concern. If income continues to slide, the company will likely have trouble meeting its interest payments.

## **ACCOUNTING, ANALYSIS, AND PRINCIPLES (Continued)**

**Note that interest expense in this problem is larger than the company's yearly cash interest payments. Cash payments for interest are €150 per year. Thus, one might argue the times interest earned ratio 'understates' the company's ability to make interest payments. Essentially, the company is delaying the payment of some of the interest each year until the bond's maturity date. With the company's current cash balance and low income, one would have to question the company's ability to meet its obligation on the maturity date when it arrives.**

### **PRINCIPLES**

**One could argue that this represents a classic trade-off between relevance and faithful representation. Many people think that the fair values of companies' assets and liabilities are relevant to making investing and financing decisions. However, the determination of fair value is the responsibility of management. Management may have incentives to 'skew' reported fair value numbers one direction or the other. For example, in this case, changes in the fair value of debt would be part of the period's net income. Thus, management may have an incentive to bias their estimate of the fair values of their debt.**

**On the other hand, one might argue that fair values of debt are not really relevant if the company will not pay off the debt early.**

## PROFESSIONAL RESEARCH

According to IAS 39:

(a) *Initial measurement of financial assets and financial liabilities*

When a financial asset or financial liability is recognised initially, an entity shall measure it at its fair value plus, in the case of a financial asset or financial liability not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition or issue of the financial asset or financial liability. (para. 43)

(b) *Derecognition of a financial liability*

An entity shall remove a financial liability (or a part of a financial liability) from its statement of financial position when, and only when, it is extinguished—ie when the obligation specified in the contract is discharged or cancelled or expires. (para. 39)

An exchange between an existing borrower and lender of debt instruments with substantially different terms shall be accounted for as an extinguishment of the original financial liability and the recognition of a new financial liability. Similarly, a substantial modification of the terms of an existing financial liability or a part of it (whether or not attributable to the financial difficulty of the debtor) shall be accounted for as an extinguishment of the original financial liability and the recognition of a new financial liability. (para. 40)

The difference between the carrying amount of a financial liability (or part of a financial liability) extinguished or transferred to another party and the consideration paid, including any non-cash assets transferred or liabilities assumed, shall be recognised in profit or loss. (para. 41)

## PROFESSIONAL SIMULATION

### Journal Entries

April 1, 2009

Cash .....	5,307,228.36*	
Bonds Payable .....		5,307,228.36

\*Price using Tables:

$$\begin{aligned}
 &\$5,000,000 \times .38554 = \$1,927,700 \\
 &550,000 \times 6.14457 = \underline{3,379,514} \\
 &\qquad\qquad\qquad \underline{\$5,307,214}
 \end{aligned}$$

Difference due to rounding in tables.

April 1, 2010

Interest Payable.....	550,000.00	
Cash .....		550,000.00

Note: Entry made on March 31, 2010:

Interest Expense .....	530,722.84	
Bond Payable .....	19,277.16	
Interest Payable .....		550,000.00

### Resources

	A	B	C	D	E	F	G	H	I	J	K	L
1												
2	<b>Schedule of Bond Premium Amortization</b>											
3	<b>Effective Interest Method-Annual Interest Payments</b>											
4	<b>10-Year, 11% Bonds Sold to Yield 10%</b>											
5												
6												
7												
8												
9												
10	<b>Date</b>	<b>Cash Paid</b>	<b>Interest Expense</b>	<b>Premium Amortized</b>	<b>Carrying Amount of Bonds</b>							
11	April 1, 2009											
12	April 1, 2010	550,000	530,722.84	19,277.16	5,287,951.19							
13	April 1, 2011	550,000	528,795.12	21,204.88	5,266,746.31							
14	April 1, 2012	550,000	526,674.63	23,325.37	5,243,420.94							
15	April 1, 2013	550,000	524,342.09	25,657.91	5,217,763.03							
16	April 1, 2014	550,000	521,776.30	28,223.70	5,189,539.34							
17	April 1, 2015	550,000	518,953.93	31,046.07	5,158,493.27							
18	April 1, 2016	550,000	515,849.33	34,150.67	5,124,342.60							
19	April 1, 2017	550,000	512,434.26	37,565.74	5,085,775.86							
20	April 1, 2018	550,000	508,677.69	41,322.31	5,045,454.54							
21	April 1, 2019	550,000	504,545.45	45,454.55	5,000,000.00							
22		\$5,500,000	\$5,192,771.64	\$307,228.36								
23												
24												
25												
26												
27												
28												
29												

## PROFESSIONAL SIMULATION (Continued)

### Financial Statements

**BALZAC INC.**  
**Statement of Financial Position as of March 31, 2010**

**Non-current liabilities**

11% bonds payable (Note A) .....	\$5,287,951
Asset retirement obligation, warehouse site .....	35,000
Notes payable (Note B).....	<u>1,100,000</u>
Total non-current liabilities.....	<u>\$6,422,951</u>

**Note A—Bonds** The 11% bonds call for annual interest payments on each April 1. The bonds mature on April 1, 2019.

**Note B—Notes Payable** The current liabilities include current maturities of several notes payable. The long-term notes payable mature as follows.

Due Date	Amount Due
April 1, 2011 – March 31, 2012	\$600,000
April 1, 2012 – March 31, 2013	500,000