

CHAPTER 15

Long-Term Liabilities

ASSIGNMENT CLASSIFICATION TABLE

<u>Learning Objectives</u>	<u>Questions</u>	<u>Brief Exercises</u>	<u>Do It!</u>	<u>Exercises</u>	<u>A Problems</u>	<u>B Problems</u>
1. Explain why bonds are issued.	1, 2, 3, 4, 5	1	1	1, 2		
2. Prepare the entries for the issuance of bonds and interest expense.	6, 7, 8	2, 3, 4	2	3, 4, 5, 6, 7, 8	1A, 2A, 5A, 6A, 9A	1B, 2B, 5B, 6B, 9B
3. Describe the entries when bonds are redeemed or converted.	9, 10, 16	5	3	5, 6, 8, 9, 18, 19	1A, 2A, 9A	1B, 2B, 9B
4. Describe the accounting for long-term notes payable.	11	6	4	10, 11	3A	3B
5. Contrast the accounting for operating and capital leases.	12, 13, 14	7	5	12	4A	4B
6. Identify the methods for the presentation and analysis of long-term liabilities.	15	8	5	13, 14	1A, 2A, 7A, 8A	1B, 2B, 7B, 8B
*7. Compute the market price of a bond.	19	9		15		
*8. Apply the effective-interest method of amortizing bond discount and bond premium.	17, 18	10		16, 17	5A, 6A	5B, 6B
*9. Apply the straight-line method of amortizing bond discount and bond premium.	20, 21	11, 12		18, 19	7A, 8A, 9A	7B, 8B, 9B

***Note:** All **asterisked** Questions, Exercises, and Problems relate to material contained in the appendix to the chapter.

ASSIGNMENT CHARACTERISTICS TABLE

Problem Number	Description	Difficulty Level	Time Allotted (min.)
1A	Prepare entries to record issuance of bonds, interest accrual, and bond redemption.	Moderate	20–30
2A	Prepare entries to record issuance of bonds, interest accrual, and bond redemption.	Moderate	15–20
3A	Prepare installment payments schedule and journal entries for a mortgage note payable.	Moderate	20–30
4A	Analyze three different lease situations and prepare journal entries.	Moderate	20–30
*5A	Prepare entries to record issuance of bonds, payment of interest, and amortization of bond premium using effective-interest method.	Moderate	30–40
*6A	Prepare entries to record issuance of bonds, payment of interest, and amortization of discount using effective-interest method. In addition, answer questions.	Moderate	30–40
*7A	Prepare entries to record issuance of bonds, interest accrual, and straight-line amortization for two years.	Simple	30–40
*8A	Prepare entries to record issuance of bonds, interest, and straight-line amortization of bond premium and discount.	Simple	30–40
*9A	Prepare entries to record interest payments, straight-line premium amortization, and redemption of bonds.	Moderate	30–40
1B	Prepare entries to record issuance of bonds, interest accrual, and bond redemption.	Moderate	20–30
2B	Prepare entries to record issuance of bonds, interest accrual, and bond redemption.	Moderate	15–20
3B	Prepare installment payments schedule and journal entries for a mortgage note payable.	Moderate	20–30
4B	Analyze three different lease situations and prepare journal entries.	Moderate	20–30
*5B	Prepare entries to record issuance of bonds, payment of interest, and amortization of bond discount using effective-interest method.	Moderate	30–40

ASSIGNMENT CHARACTERISTICS TABLE (Continued)

Problem Number	Description	Difficulty Level	Time Allotted (min.)
*6B	Prepare entries to record issuance of bonds, payment of interest, and amortization of premium using effective-interest method. In addition, answer questions.	Moderate	30–40
*7B	Prepare entries to record issuance of bonds, interest accrual, and straight-line amortization for two years.	Simple	30–40
*8B	Prepare entries to record issuance of bonds, interest, and straight-line amortization of bond premium and discount.	Simple	30–40
*9B	Prepare entries to record interest payments, straight-line discount amortization, and redemption of bonds.	Moderate	30–40

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Number	LO	BT	Difficulty	Time (min.)
BE1	1	AP	Simple	6–8
BE2	2	AP	Simple	4–6
BE3	2	AP	Simple	3–5
BE4	2	AP	Simple	4–6
BE5	3	AP	Simple	3–5
BE6	4	AP	Simple	6–8
BE7	5	AP	Simple	3–5
BE8	6	AP	Simple	3–5
BE9	7	AP	Simple	3–5
BE10	8	AP	Simple	4–6
BE11	9	AP	Simple	4–6
BE12	9	AP	Simple	4–6
DI1	1	C	Simple	2–3
DI2	2	AP	Simple	4–6
DI3	3	AP	Simple	3–5
DI4	4	AP	Simple	4–6
DI5	5,6	AP	Simple	4–6
EX1	1	C	Simple	4–6
EX2	1	AN	Simple	4–6
EX3	2	AP	Simple	4–6
EX4	2	AP	Simple	4–6
EX5	2, 3	AP	Simple	5–7
EX6	2, 3	AP	Moderate	8–10
EX7	2	AP	Simple	6–8
EX8	2, 3	AP	Simple	6–8
EX9	3	AP	Moderate	8–10
EX10	4	AP	Simple	6–8
EX11	4	AP	Simple	8–10
EX12	5	AP	Simple	4–6
EX13	6	AP	Simple	3–5
EX14	6	AN	Simple	4–6

LONG-TERM LIABILITIES (Continued)

Number	LO	BT	Difficulty	Time (min.)
EX15	7	AP	Simple	4–6
EX16	8	AP	Moderate	8–10
EX17	8	AP	Moderate	8–10
EX18	3, 9	AP	Simple	6–8
EX19	3, 9	AP	Simple	6–8
P1A	2, 3, 6	AP	Moderate	20–30
P2A	2, 3, 6	AP	Moderate	15–20
P3A	4	AP	Moderate	20–30
P4A	5	AP	Moderate	20–30
P5A	2, 8	AP	Moderate	30–40
P6A	2, 8	AP	Moderate	30–40
P7A	6, 9	AP	Simple	30–40
P8A	6, 9	AP	Simple	30–40
P9A	2, 3, 9	AP	Moderate	30–40
P1B	2, 3, 6	AP	Moderate	20–30
P2B	2, 3, 6	AP	Moderate	15–20
P3B	4	AP	Moderate	20–30
P4B	5	AP	Moderate	20–30
P5B	2, 8	AP	Moderate	30–40
P6B	2, 8	AP	Moderate	30–40
P7B	6, 9	AP	Simple	30–40
P8B	6, 9	AP	Simple	30–40
P9B	2, 3, 9	AP	Moderate	30–40
BYP1	3, 6	AN	Simple	5–10
BYP2	6	AP	Simple	10–15
BYP3	6	AP	Simple	10–15
BYP4	1	C	Simple	10–15
BYP5	2, 3, 9	AN	Moderate	15–20
BYP6	1	C	Simple	10–15
BYP7	—	E	Simple	10–15
BYP8	—	E	Simple	5–10
BYP9	—	AP	Moderate	10–15

Correlation Chart between Bloom's Taxonomy, Learning Objectives and End-of-Chapter Exercises and Problems

Learning Objective	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
1. Explain why bonds are issued.	Q15-5	Q15-1 Q15-2 Q15-3	Q15-4 DI15-1 E15-1	BE15-1	E15-2	
2. Prepare the entries for the issuance of bonds and interest expense.		Q15-6 Q15-8	Q15-7 BE15-2 BE15-3 BE15-4 DI15-2 E15-3 E15-4	E15-5 E15-6 E15-7 E15-8 P15-1A P15-2A P15-5A	P15-6A P15-9A P15-1B P15-2B P15-5B P15-6B P15-9B	
3. Describe the entries when bonds are redeemed or converted.		Q15-10 Q15-16	Q15-9 BE15-5 DI15-3 E15-5 E15-6	P15-9A P15-9B P15-1B P15-2B P15-1A	P15-2A E15-18 E15-19 E15-8 E15-9	
4. Describe the accounting for long-term notes payable.			Q15-11 BE15-6 DI15-4	E15-10 E15-11 P15-3A	P15-3B	
5. Contrast the accounting for operating and capital leases.		Q15-12 Q15-13	Q15-14 BE15-7 DI15-5	E15-12 P15-4A P15-4B		
6. Identify the methods for the presentation and analysis of long-term liabilities.	Q15-15		BE15-8 E15-13 P15-1A	P15-2A P15-7A P15-8A P15-1B	P15-2B P15-7B P15-8B	E15-14
*7. Compute the market price of a bond.		Q15-19	BE15-9	E15-15		
*8. Apply the effective-interest method of amortizing bond discount and bond premium.		Q15-18 Q15-19	BE15-10 E15-16 E15-17	P15-5A P15-6A P15-5B	P15-6B	
*9. Apply the straight-line method of amortizing bond discount and bond premium.		Q15-20 Q15-21	Q15-20 BE15-11 BE15-12 E15-18	E15-19 P15-7A P15-8A P15-9A	P15-7B P15-8B P15-9B	
Broadening Your Perspective		Communication Real-World Focus	Comp. Analysis FASB Codification	Financial Reporting Decision Making Across the Organization		All About You Ethics Case

ANSWERS TO QUESTIONS

1.
 - (a) Long-term liabilities are obligations that are expected to be paid after one year. Examples include bonds, long-term notes, and lease obligations.
 - (b) Bonds are a form of interest-bearing notes payable used by corporations, universities, and governmental agencies.
2.
 - (a) The major advantages are:
 - (1) Stockholder control is not affected—bondholders do not have voting rights, so current stockholders retain full control of the company.
 - (2) Tax savings result—bond interest is deductible for tax purposes; dividends on stock are not.
 - (3) Earnings per share may be higher—although bond interest expense will reduce net income, earnings per share on common stock will often be higher under bond financing because no additional shares of common stock are issued.
 - (b) The major disadvantages in using bonds are that interest must be paid on a periodic basis and the principal (face value) of the bonds must be paid at maturity.
3.
 - (a) Secured bonds have specific assets of the issuer pledged as collateral. In contrast, unsecured bonds are issued against the general credit of the borrower. These bonds are called debenture bonds.
 - (b) Term bonds mature at a single specified future date. In contrast, serial bonds mature in installments.
 - (c) Registered bonds are issued in the name of the owner. In contrast, bearer (coupon) bonds are not registered. Holders of bearer bonds must send in coupons to receive interest payments.
 - (d) Convertible bonds may be converted into common stock at the bondholders' option. Callable bonds are subject to retirement at a stated dollar amount prior to maturity at the option of the issuer.
4.
 - (a) Face value is the amount of principal due at the maturity date.
 - (b) The contractual interest rate is the rate used to determine the amount of cash interest the borrower pays and the investor receives. This rate is also called the stated interest rate because it is the rate stated on the bonds.
 - (c) A bond indenture is a legal document that sets forth the terms of the bond issue.
 - (d) A bond certificate is a legal document that indicates the name of the issuer, the face value of the bonds, the contractual interest rate and maturity date of the bonds.
5. The two major obligations incurred by a company when bonds are issued are the interest payments due on a periodic basis and the principal which must be paid at maturity.
6. Less than. Investors are required to pay more than the face value; therefore, the market interest rate is less than the contractual rate.
7. \$28,000. $\$800,000 \times 7\% \times 1/2 \text{ year} = \$28,000$.
8. \$780,000. The balance of the Bonds Payable account minus the balance of the Discount on Bonds Payable account (or plus the balance of the Premium on Bonds Payable account) equals the carrying value of the bonds.

Questions Chapter 15 (Continued)

9. Debits: Bonds Payable (for the face value) and Premium on Bonds Payable (for the unamortized balance).
Credits: Cash (for 97% of the face value) and Gain on Bond Redemption (for the difference between the cash paid and the bonds' carrying value).
10. A convertible bond permits bondholders to convert it into common stock at the option of the bondholders.
(a) For bondholders, the conversion option gives an opportunity to benefit if the market price of the common stock increases substantially.
(b) For the issuer, convertible bonds usually have a higher selling price and a lower rate of interest than comparable debt securities without the conversion option.
11. No, Rob is not right. Each payment by Rob consists of: (1) interest on the unpaid balance of the loan and (2) a reduction of loan principal. The interest decreases each period while the portion applied to the loan principal increases each period.
12. (a) A lease agreement is a contract in which the lessor gives the lessee the right to use an asset for a specified period in return for one or more periodic rental payments. The lessor is the owner of the property and the lessee is the renter or tenant.
(b) The two most common types of leases are operating leases and capital leases.
(c) In an operating lease, the property is rented by the lessee and the lessor retains all ownership risks and responsibilities. A capital lease transfers substantially all the benefits and risks of ownership from the lessor to the lessee, so that the lease is in effect a purchase of the property.
13. This lease would be reported as an operating lease. In an operating lease, each payment is debited to Rent Expense. Neither a leased asset nor a lease liability is capitalized.
14. In a capital lease agreement, the lessee records the present value of the lease payments as an asset and a liability. Therefore, Benedict Company would debit Leased Asset—Equipment for \$186,300 and credit Lease Liability for the same amount.
15. The nature and the amount of each long-term liability should be presented in the balance sheet or in schedules in the accompanying notes to the statements. The notes should also indicate the interest rates, maturity dates, conversion privileges, and assets pledged as collateral.
16. Apple did not redeem any of its debt during the 2011 fiscal year.
- *17. Kelli is probably indicating that since the borrower has the use of the bond proceeds over the term of the bonds, the borrowing rate in each period should be the same. The effective-interest method results in a varying amount of interest expense but a constant rate of interest on the balance outstanding. Accordingly, it results in a better matching of expenses with revenues than the straight-line method. When the difference between the straight-line method of amortization and the effective interest method is material, GAAP requires the use of the effective interest method.
- *18. Decrease. Under the effective-interest method the interest charge per period is determined by multiplying the carrying value of the bonds by the effective-interest rate. When bonds are issued at a premium, the carrying value decreases over the life of the bonds. As a result, the interest expense will also decrease over the life of the bonds because it is determined by multiplying the decreasing carrying value of the bonds at the beginning of the period by the effective-interest rate.

Questions Chapter 15 (Continued)

- *19.** No, Jill is not right. The market price of any bond is a function of three factors: (1) The dollar amounts to be received by the investor (interest and principal), (2) The length of time until the amounts are received (interest payment dates and maturity date), and (3) The market interest rate.
- *20.** The straight-line method results in the same amortized amount being assigned to Interest Expense each interest period. This amount is determined by dividing the total bond discount or premium by the number of interest periods the bonds will be outstanding.
- *21.** \$28,000. Interest expense is the interest to be paid in cash less the premium amortization for the year. Cash to be paid equals $8\% \times \$400,000$ or \$32,000. Total premium equals 5% of \$400,000 or \$20,000. Since this is to be amortized over 5 years (the life of the bonds) in equal amounts, the amortization amount is $\$20,000 \div 5 = \$4,000$. Thus, $\$32,000 - \$4,000$ or \$28,000 equals interest expense for 2014.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 15-1

	<u>Issue Stock</u>	<u>Issue Bond</u>
Income before interest and taxes	\$700,000	\$700,000
Interest (\$2,000,000 X 8%)	0	160,000
Income before income taxes	700,000	540,000
Income tax expense (30%)	210,000	162,000
Net income (a)	\$490,000	\$378,000
Outstanding shares (b)	700,000	500,000
Earnings per share (a) ÷ (b)	\$0.70	\$0.76

Net income is higher if stock is used. However, earnings per share is lower than earnings per share if bonds are used because of the additional shares of stock that are outstanding.

BRIEF EXERCISE 15-2

(a)	Jan. 1	Cash.....	4,000,000	
		Bonds Payable		
		(4,000 X \$1,000)		4,000,000
(b)	July 1	Interest Expense	160,000	
		Cash		
		(\$4,000,000 X 8% X 1/2)		160,000
(c)	Dec. 31	Interest Expense	160,000	
		Interest Payable		
		(\$4,000,000 X 8% X 1/2)		160,000

BRIEF EXERCISE 15-3

(a)	Jan. 1	Cash (\$2,000,000 X .97)	1,940,000	
		Discount on Bonds Payable	60,000	
		Bonds Payable		2,000,000
(b)	Jan. 1	Cash (\$2,000,000 X 1.04)	2,080,000	
		Bonds Payable		2,000,000
		Premium on Bonds Payable.....		80,000

BRIEF EXERCISE 15-4

1.	Jan. 1	Cash (1,000 X \$1,000)	1,000,000	
		Bonds Payable		1,000,000
2.	July 1	Cash (\$900,000 X 1.02)	918,000	
		Bonds Payable		900,000
		Premium on Bonds Payable.....		18,000
3.	Sept. 1	Cash (\$400,000 X .98)	392,000	
		Discount on Bonds Payable	8,000	
		Bonds Payable		400,000

BRIEF EXERCISE 15-5

Bonds Payable	1,000,000	
Loss on Bond Redemption (\$1,010,000 – \$940,000)	70,000	
Discount on Bonds Payable		60,000
Cash (\$1,000,000 X 101%)		1,010,000

BRIEF EXERCISE 15-6

<u>Semiannual Interest Period</u>	(A) <u>Cash Payment</u>	(B) <u>Interest Expense (D) X 5%</u>	(C) <u>Reduction of Principal (A) – (B)</u>	(D) <u>Principal Balance (D) – (C)</u>
Issue Date				\$800,000
1	\$64,195	\$40,000	\$24,195	775,805

Dec. 31	Cash.....		800,000	
	Mortgage Payable.....			800,000
June 30	Interest Expense		40,000	
	Mortgage Payable		24,195	
	Cash			64,195

BRIEF EXERCISE 15-7

1.	Rent Expense		80,000	
	Cash			80,000
2.	Leased Asset—Building.....		700,000	
	Lease Liability			700,000

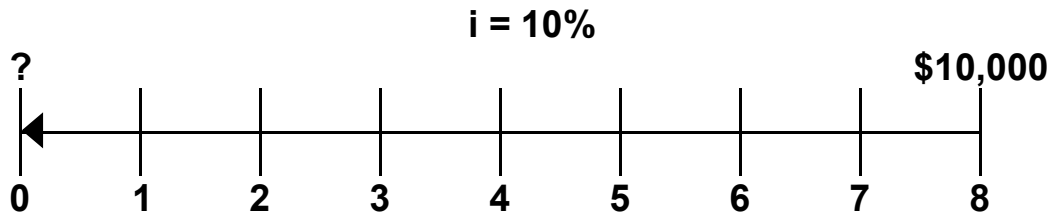
BRIEF EXERCISE 15-8

Long-term liabilities

Bonds payable, due 2016	\$600,000	
Less: Discount on bonds payable	<u>45,000</u>	\$555,000
Notes payable, due 2019		80,000
Lease liability		<u>70,000</u>
Total long-term liabilities		<u>\$705,000</u>

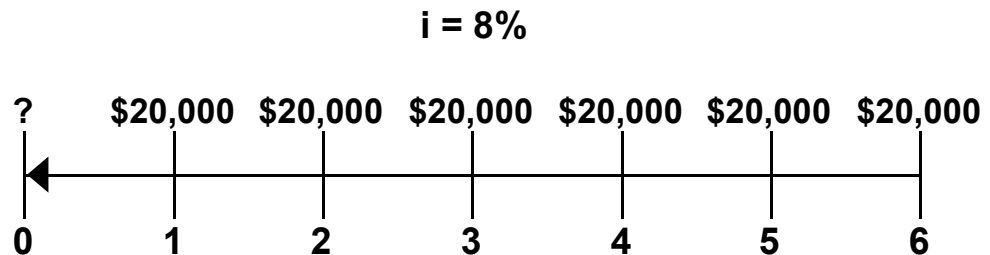
***BRIEF EXERCISE 15-9**

(a)



Discount rate from Table 15 A-1 is .46651 (8 periods at 10%). Present value of \$10,000 to be received in 8 periods discounted at 10% is therefore \$4,665.10 (\$10,000 X .46651).

(b)



Discount rate from Table 15 A-2 is 4.62288 (6 periods at 8%). Present value of 6 payments of \$20,000 each discounted at 8% is therefore \$92,457.60 (\$20,000 X 4.62288).

***BRIEF EXERCISE 15-10**

(a) Interest Expense	46,884	
Discount on Bonds Payable		1,884
Cash		45,000

(b) Interest expense is greater than interest paid because the bonds sold at a discount which must be amortized over the life of the bonds. The bonds sold at a discount because investors demanded a market interest rate higher than the contractual interest rate.

(c) Interest expense increases each period because the bond carrying value increases each period. As the market interest rate is applied to this bond carrying amount, interest expense will increase.

***BRIEF EXERCISE 15-11**

(a)	Jan. 1	Cash (.96 X \$5,000,000)	4,800,000	
		Discount on Bonds Payable	200,000	
		Bonds Payable		5,000,000
(b)	July 1	Interest Expense	235,000	
		Discount on Bonds Payable		
		(\$200,000 ÷ 20)		10,000
		Cash		
		(\$5,000,000 X 9% X 1/2)		225,000

***BRIEF EXERCISE 15-12**

(a)	Jan. 1	Cash (1.02 X \$4,000,000)	4,080,000	
		Bonds Payable		4,000,000
		Premium on Bonds Payable ...		80,000
(b)	July 1	Interest Expense	192,000	
		Premium on Bonds Payable		
		(\$80,000 ÷ 10)	8,000	
		Cash		
		(\$4,000,000 X 10% X 1/2)) ...		200,000

SOLUTIONS FOR DO IT! REVIEW EXERCISES

DO IT! 15-1

1. False. Mortgage bonds and sinking fund bonds are both examples of secured bonds.
2. False. Convertible bonds can be converted into common stock at the bondholder's option; callable bonds can be retired by the issuer at a set amount prior to maturity.
3. True.
4. True.
5. True.

DO IT! 15-2

(a) Cash.....	520,000	
Bonds Payable		500,000
Premium on Bonds Payable.....		20,000
(To record sale of bonds at a premium)		
 (b) Long-term liabilities		
Bonds payable		\$500,000
Plus: Premium on bonds payable		<u>20,000</u>
		<u>\$520,000</u>

DO IT! 15-3

Loss on Bond Redemption.....	6,000	
Bonds Payable	400,000	
Discount on Bonds Payable		10,000
Cash.....		396,000
(To record redemption of bonds at 99)		

DO IT! 15-4

Cash	700,000	
Mortgage Payable		700,000
(To record mortgage loan)		
 Interest Expense	21,000*	
Mortgage Payable.....	14,714	
Cash.....		35,714
(To record semiannual payment on mortgage)		

*Interest expense = \$700,000 X 6% X 6/12

DO IT! 15-5

(a) Leased Asset—Equipment.....	192,000	
 Lease Liability		192,000
 (To record leased asset and lease liability)		

(b) The debt to assets ratio = $\$1,100,000 \div \$1,800,000 = 61\%$. This ratio means that 61% of the total assets were provided by creditors. The higher the percentage of debt to assets, the greater the risk that the company may be unable to meet its maturing obligations.

SOLUTIONS TO EXERCISES

EXERCISE 15-1

1. True.
2. True.
3. False. When seeking long-term financing, an advantage of issuing *bonds* over issuing *common stock* is that tax savings result.
4. True.
5. False. *Unsecured* bonds are also known as debenture bonds.
6. False. Bonds that mature in installments are called *serial* bonds.
7. True.
8. True.
9. True.
10. True.

EXERCISE 15-2

	Plan One Issue Stock	Plan Two Issue Bonds
Income before interest and taxes	\$800,000	\$800,000
Interest (\$2,700,000 X 10%)	—	<u>270,000</u>
Income before taxes	800,000	530,000
Income tax expense (30%)	<u>240,000</u>	<u>159,000</u>
Net income	<u>\$560,000</u>	<u>\$371,000</u>
Outstanding shares	<u>210,000</u>	<u>120,000</u>
Earnings per share	<u>\$2.67</u>	<u>\$3.09</u>

EXERCISE 15-3

(a)	Jan. 1	Cash	500,000	
		Bonds Payable		500,000
(b)	July 1	Interest Expense.....	25,000	
		Cash (\$500,000 X 10% X 1/2)		25,000
(c)	Dec. 31	Interest Expense.....	25,000	
		Interest Payable		25,000

EXERCISE 15-4

(a)	Jan. 1	Cash.....	400,000	
		Bonds Payable		400,000
(b)	July 1	Interest Expense.....	16,000	
		Cash (\$400,000 X 8% X 1/2)		16,000
(c)	Dec. 31	Interest Expense.....	16,000	
		Interest Payable.....		16,000

EXERCISE 15-5

(a)			2014	
	Jan. 1	Cash	400,000	
		Bonds Payable		400,000
(b)	July 1	Interest Expense.....	18,000	
		Cash (\$400,000 X 9% X 1/2)		18,000
(c)	Dec. 31	Interest Expense.....	18,000	
		Interest Payable		18,000
(d)			2024	
	Jan. 1	Bonds Payable.....	400,000	
		Cash.....		400,000

EXERCISE 15-6

At 100

(a)	(1)	Cash	2,000,000	
		Bonds Payable.....		2,000,000

At 98

(2)	Cash	1,960,000	
	Discount on Bonds Payable.....	40,000	
	Bonds Payable.....		2,000,000

At 103

(3)	Cash	2,060,000	
	Bonds Payable.....		2,000,000
	Premium on Bonds Payable		60,000

Redemption of bonds at maturity

(b)	Bonds Payable	2,000,000	
	Cash		2,000,000

Redemption of bonds before maturity at 98

(c)	Bonds Payable	2,000,000	
	Premium on Bonds Payable	9,000	
	Cash		1,960,000
	Gain on Bond Redemption		49,000

Conversion of bonds into common stock

(d)	Bonds Payable	2,000,000	
	Common Stock		600,000
	Paid-in Capital in Excess of Par—		
	Common Stock		1,400,000

EXERCISE 15-7

(a) (1)	Cash	485,000	
	Discount on Bonds Payable	15,000	
	Bonds Payable		500,000

(2)	Semiannual interest payments		
	(\$20,000* X 10)		\$200,000
	Plus: Bond discount.....		<u>15,000</u>
	Total cost of borrowing.....		<u>\$215,000</u>

*($\$500,000 \times .08 \times 6/12$)

OR

	Principal at maturity		\$500,000
	Semiannual interest payments		
	(\$20,000 X 10).....		<u>200,000</u>
	Cash to be paid to bondholders		700,000
	Cash received from bondholders		<u>485,000</u>
	Total cost of borrowing.....		<u>\$215,000</u>

(b) (1)	Cash	525,000	
	Bonds Payable		500,000
	Premium on Bonds Payable		25,000

(2)	Semiannual interest payments		
	(\$20,000 X 10).....		\$200,000
	Less: Bond premium.....		<u>25,000</u>
	Total cost of borrowing.....		<u>\$175,000</u>

OR

	Principal at maturity		\$500,000
	Semiannual interest payments		
	(\$20,000 X 10).....		<u>200,000</u>
	Cash to be paid to bondholders		700,000
	Cash received from bondholders		<u>525,000</u>
	Total cost of borrowing.....		<u>\$175,000</u>

EXERCISE 15-8

(a)	Jan. 1	Interest Payable	56,000	
		Cash		56,000
(b)	Jan 1	Bonds Payable.....	600,000	
		Loss on Bond Redemption	18,000	
		Cash (\$600,000 X 1.03).....		618,000
(c)	July 1	Interest Expense.....	35,000	
		Cash (\$1,000,000 X 7% X 1/2)		35,000

EXERCISE 15-9

1.	June 30	Bonds Payable	130,000	
		Loss on Bond Redemption		
		(\$132,600 – \$117,500)	15,100	
		Discount on Bonds Payable		
		(\$130,000 – \$117,500)		12,500
		Cash (\$130,000 X 102%)		132,600
2.	June 30	Bonds Payable	150,000	
		Premium on Bonds Payable	1,000	
		Gain on Bond Redemption		
		(\$151,000 – \$147,000)		4,000
		Cash (\$150,000 X 98%)		147,000
3.	Dec. 31	Bonds Payable	20,000	
		Common Stock		
		(\$5 X 20* X 30)		3,000
		Paid-in Capital in Excess of		
		Par—Common Stock		17,000

*(\$20,000 ÷ \$1,000)

Note: As per the textbook, the market value of the stock is ignored in the conversion.

EXERCISE 15-10

		<u>2014</u>	
		Issuance of Note	
Dec. 31	Cash.....	300,000	
	Mortgage Payable.....		300,000
<u>2015</u>			
First Installment Payment			
June 30	Interest Expense		
	(\$300,000 X 10% X 6/12).....	15,000	
	Mortgage Payable	10,000	
	Cash		25,000
Second Installment Payment			
Dec. 31	Interest Expense		
	[(\$300,000 – \$10,000) X 10% X 6/12]	14,500	
	Mortgage Payable	10,500	
	Cash		25,000

EXERCISE 15-11

		January 1, 2014	
(a)	Cash.....	300,000	
	Mortgage Payable		300,000
June 30, 2014			
	Interest Expense		
	(\$300,000 X 8% X 6/12).....	12,000	
	Mortgage Payable	8,000	
	Cash.....		20,000
December 31, 2014			
	Interest Expense		
	(\$292,000 X 8% X 6/12).....	11,680	
	Mortgage Payable	8,320	
	Cash.....		20,000

EXERCISE 15-11 (Continued)

(b) Current: \$17,652
 $[\$20,000 - (\$283,680 \times 8\% \times 6/12)] + [\$20,000 - (\$275,027 \times 8\% \times 6/12)]$

Long-term: \$266,028 $[(\$300,000 - \$8,000 - \$8,320) - \$17,652]$

EXERCISE 15-12

(a)	Rent Expense.....	500	
	Cash.....		500

(b) Jan. 1	Leased Asset—Equipment	49,735	
	Lease Liability		49,735

EXERCISE 15-13

Long-term liabilities			
	Bonds payable, due 2019	\$180,000	
	Add: Premium on bonds payable	<u>32,000</u>	\$212,000
	Lease liability		<u>89,500</u>
	Total long-term liabilities		<u>\$301,500</u>

Note: Interest Payable is a current liability

EXERCISE 15-14

(a)	Total assets.....	\$1,000,000
	Less: Total liabilities	<u>580,000</u>
	Total stockholders' equity	<u>\$ 420,000</u>

(b) Debt to assets ratio = $\frac{\text{Total liabilities}}{\text{Total assets}} = \frac{\$580,000}{\$1,000,000} = 58\%$

(c) Times interest earned ratio = $\frac{\text{Net income} + \text{Income tax expense} + \text{Interest expense}}{\text{Interest expense}}$

= $\frac{\$150,000 + \$100,000 + \$20,000}{\$20,000} = 13.5 \text{ times}$

***EXERCISE 15-15**

Present value of principal (\$200,000 X .61391)	\$122,782
Present value of interest (\$8,000 X 7.72173)	<u>61,774</u>
Market price of bonds	<u>\$184,556</u>

***EXERCISE 15-16**

(a) Jan. 1	Cash.....	750,150	
	Discount on Bonds Payable	49,850	
	Bonds Payable		800,000
(b) July 1	Interest Expense		
	(\$750,150 X 5%).....	37,508	
	Discount on Bonds Payable		1,508
	Cash (\$800,000 X 9% X 1/2)		36,000
(c) Dec. 31	Interest Expense		
	[(750,150 + 1,508) X 5%].....	37,583	
	Discount on Bonds Payable		1,583
	Interest Payable.....		36,000

(b), (c)

Semiannual Interest Periods	(A) Interest to Be Paid (4.5% X \$800,000)	(B) Interest Expense to Be Recorded (5% X Preceding Bond Carrying Value) (E X .05)	(C) Discount Amortization (B) – (A)	(D) Unamortized Discount (D) – (C)	(E) Bond Carrying Value
Issue date				49,850	750,150
1	36,000	37,508	1,508	48,342	751,658
2	36,000	37,583	1,583	46,759	753,241

***EXERCISE 15-17**

(a)	Jan. 1	Cash	318,694	
		Premium on Bonds Payable		18,694
		Bonds Payable		300,000
(b)	July 1	Interest Expense		
		(\$318,694 X 5%)	15,935	
		Premium on Bonds Payable	565	
		Cash		
		(\$300,000 X 11% X 1/2)		16,500
(c)	Dec. 31	Interest Expense		
		[(\$318,694 – \$565) X 5%]	15,906	
		Premium on Bonds Payable	594	
		Interest Payable		16,500

(b), (c)

Semiannual Interest Periods	(A) Interest to Be Paid (5.5% X \$300,000)	(B) Interest Expense to Be Recorded (5.0% X Preceding Bond Carrying Value) (E X .05)	(C) Premium Amortization (A) – (B)	(D) Unamortized Premium (D) – (C)	(E) Bond Carrying Value
Issue date				18,694	318,694
1	16,500	15,935	565	18,129	318,129
2	16,500	15,906	594	17,535	317,535

***EXERCISE 15-18**

(a)	Jan. 1	Cash (\$600,000 X 103%)	618,000	
		Premium on Bonds Payable		18,000
		Bonds Payable		600,000
(b)	July 1	Interest Expense	26,550	
		Premium on Bonds Payable		
		(\$18,000 X 1/40)	450	
		Cash (\$600,000 X 9% X 1/2)		27,000
(c)	Dec. 31	Interest Expense	26,550	
		Premium on Bonds Payable	450	
		Interest Payable		27,000
2034				
(d)	Jan. 1	Bonds Payable	600,000	
		Cash		600,000

***EXERCISE 15-19**

2013				
(a)	Dec. 31	Cash	730,000	
		Discount on Bonds Payable	70,000	
		Bonds Payable		800,000
2014				
(b)	June 30	Interest Expense	47,500	
		Discount on Bonds Payable		
		(\$70,000 ÷ 20)		3,500
		Cash (\$800,000 X 11% X 1/2)		44,000
2014				
(c)	Dec. 31	Interest Expense	47,500	
		Discount on Bonds Payable		3,500
		Cash (\$800,000 X 11% X 1/2)		44,000
2023				
(d)	Dec. 31	Bonds Payable	800,000	
		Cash		800,000

SOLUTIONS TO PROBLEMS

PROBLEM 15-1A

(a)		2014			
	May 1		Cash	600,000	
			Bonds Payable		600,000
(b)	Dec. 31		Interest Expense.....	9,000	
			Interest Payable		
			(\$600,000 X 9% X 2/12)		9,000
(c)			Current Liabilities		
			Interest payable		\$ 9,000
			Long-term Liabilities		
			Bonds payable, due 2019.....		\$600,000
(d)		2015			
	May 1		Interest Payable	9,000	
			Interest Expense		
			(\$600,000 X 9% X 4/12)	18,000	
			Cash.....		27,000
(e)	Nov. 1		Interest Expense.....	27,000	
			Cash (\$600,000 X 9% X 1/2)		27,000
(f)	Nov. 1		Bonds Payable.....	600,000	
			Loss on Bond Redemption	12,000	
			Cash (\$600,000 X 1.02).....		612,000

PROBLEM 15-2A

(a)		2014			
	Jan. 1		Cash (\$750,000 X 1.04)	780,000	
			Bonds Payable		750,000
			Premium on Bonds Payable.....		30,000

(b)	Current Liabilities				
			Interest payable		
			(\$750,000 X 10% X 1/2)		\$ 37,500

			Long-term Liabilities		
			Bonds payable, due 2024.....	\$750,000	
			Add: Premium on bonds payable.....	<u>27,000</u>	\$777,000

(c)		2016			
	Jan. 1		Bonds Payable	750,000	
			Premium on Bonds Payable	24,000	
			Loss on Bond Redemption	13,500*	
			Cash (\$750,000 X 1.05).....		787,500

*(**\$787,500 – \$774,000**)

PROBLEM 15-3A

(a) <u>Semiannual Interest Period</u>	<u>Cash Payment</u>	<u>Interest Expense</u>	<u>Reduction of Principal</u>	<u>Principal Balance</u>
Issue Date				\$400,000
1	\$29,433	\$16,000	\$13,433	386,567
2	29,433	15,463	13,970	372,597
3	29,433	14,904	14,529	358,068
4	29,433	14,323	15,110	342,958

2013				
Dec. 31	Cash		400,000	
	Mortgage Payable			400,000
2014				
June 30	Interest Expense		16,000	
	Mortgage Payable.....		13,433	
	Cash.....			29,433
Dec. 31	Interest Expense		15,463	
	Mortgage Payable.....		13,970	
	Cash.....			29,433

(c)		<u>12/31/14</u>	
	Current Liabilities		
	Current portion of mortgage payable	\$ 29,639*	
	Long-term Liabilities		
	Mortgage payable, due 2023	\$342,958**	

*(\$14,529 + \$15,110)

**(\$372,597 – \$14,529 – \$15,110)

PROBLEM 15-4A

- (a) Ruggiero Inc. should record the Judson Delivery lease as a capital lease because: (1) the lease term is greater than 75% of the estimated economic life of the leased property and (2) the present value of the lease payments is 90% or more of the fair value of the computer. It should be noted that only one condition needs to be met to require capitalization.

Both the Hester Co. and Gunselmon Auto leases should be reported as operating leases because none of the four conditions is met to require treatment as a capital lease.

- (b) The Hester Co. lease is an operating lease. The entry to record the lease payment in 2014 therefore is as follows:

Rent Expense	4,200	
Cash		4,200

- (c) The Judson Delivery lease is a capital lease. The entry to record the capital lease on January 1, 2014 therefore is as follows:

Leased Asset—Equipment.....	26,000	
Lease Liability		26,000

***PROBLEM 15-5A**

(a)		2014			
	July 1	Cash	2,271,813		
		Bonds Payable		2,000,000	
		Premium on Bonds Payable			271,813

(b) FLANAGIN CORPORATION
Bond Premium Amortization
Effective-Interest Method—Semiannual Interest Payments
10% Bonds Issued at 8%

	(A)	(B)	(C)	(D)	(E)
Semi-annual Interest Periods	Interest to Be Paid	Interest Expense	Premium Amortization (A) – (B)	Unamortized Premium (D) – (C)	Bond Carrying Value (\$2,000,000 + D)
Issue date				\$271,813	\$2,271,813
1	\$100,000	\$90,873	\$9,127	262,686	2,262,686
2	100,000	90,507	9,493	253,193	2,253,193
3	100,000	90,128	9,872	243,321	2,243,321

(c)		2014			
	Dec. 31	Interest Expense			
		(\$2,271,813 X 4%)		90,873	
		Premium on Bonds Payable		9,127	
		Interest Payable			
		(\$2,000,000 X 5%)			100,000

(d)		2015			
	July 1	Interest Expense			
		[(\$2,271,813 – \$9,127) X 4%]		90,507	
		Premium on Bonds Payable		9,493	
		Cash			100,000

(e)		2015			
	Dec. 31	Interest Expense			
		[(\$2,262,686 – \$9,493) X 4%]		90,128	
		Premium on Bonds Payable		9,872	
		Interest Payable			100,000

*PROBLEM 15-6A

		2014			
(a)	(1)	July 1	Cash	4,376,892	
			Discount on Bonds Payable	623,108	
			Bonds Payable.....		5,000,000
	(2)	Dec. 31	Interest Expense (\$4,376,892 X 5%)	218,845	
			Discount on Bonds Payable.....		18,845
			Interest Payable (\$5,000,000 X 4%).....		200,000
	(3)	July 1	Interest Expense [((\$4,376,892 + \$18,845) X 5%]...	219,787	
			Discount on Bonds Payable.....		19,787
			Cash		200,000
	(4)	Dec. 31	Interest Expense [((\$4,395,737 + \$19,787) X 5%]..	220,776	
			Discount on Bonds Payable.....		20,776
			Interest Payable		200,000
(b)			Bonds payable	\$5,000,000	
			Less: Discount on bonds payable	<u>563,700*</u>	4,436,300
			*(\$623,108 – \$18,845 – \$19,787 – \$20,776)		

***PROBLEM 15-6A (Continued)**

(c) Dear _____:

Thank you for asking me to clarify some points about the bonds issued by Kellerman Company.

- (1) The amount of interest expense reported for 2015 related to these bonds is \$440,563 (\$219,787 + \$220,776).
- (2) When the bonds are sold at a discount, the effective-interest method will result in less interest expense reported than the straight-line method in 2015. Straight-line interest expense for 2015 is \$462,310 [\$200,000 + \$200,000 + (\$31,155 + \$31,155)].
- (3) The total cost of borrowing is \$4,623,108 as shown below:

Semiannual interest payments	
(\$5,000,000 X 4%) = \$200,000; \$200,000 X 20	\$4,000,000
Add: Bond discount (\$5,000,000 – \$4,376,892)	<u>623,108</u>
Total cost of borrowing.....	<u>\$4,623,108</u>

- (4) The total bond interest expense over the life of the bonds is the same under either method of amortization.

If you have other questions, please contact me.

Sincerely,

***PROBLEM 15-7A**

(a)

		2014	
Jan. 1	Cash (\$3,000,000 X 1.04)	3,120,000	
	Bonds Payable		3,000,000
	Premium on Bonds Payable.....		120,000

(b) See page 15-37.

(c)

		2014	
July 1	Interest Expense	144,000	
	Premium on Bonds Payable		
	(\$120,000 ÷ 20)	6,000	
	Cash		150,000
Dec. 31	Interest Expense	144,000	
	Premium on Bonds Payable	6,000	
	Interest Payable.....		150,000

		2015	
Jan. 1	Interest Payable	150,000	
	Cash		150,000
July 1	Interest Expense	144,000	
	Premium on Bonds Payable	6,000	
	Cash		150,000
Dec. 31	Interest Expense	144,000	
	Premium on Bonds Payable	6,000	
	Interest Payable.....		150,000

(d) Current Liabilities

Interest payable	\$ 150,000
------------------------	------------

Long-term Liabilities

Bonds payable, due 2024.....	\$3,000,000	
Add: Premium on bonds payable.....	<u>96,000</u>	\$3,096,000

(b)

Semiannual Interest Periods	(A) Interest to Be Paid (5% X \$3,000,000)	(B) Interest Expense to Be Recorded (A) – (C)	(C) Premium Amortization (\$120,000 ÷ 20)	(D) Unamortized Premium (D) – (C)	(E) Bond Carrying Value [\$3,000,000 + (D)]
Issue date				\$120,000	\$3,120,000
1	\$150,000	\$144,000	\$6,000	114,000	3,114,000
2	150,000	144,000	6,000	108,000	3,108,000
3	150,000	144,000	6,000	102,000	3,102,000
4	150,000	144,000	6,000	96,000	3,096,000

***PROBLEM 15-8A**

(a) 2014

July 1	Cash ($\$3,500,000 \times 104\%$)	3,640,000	
	Premium on Bonds Payable		140,000
	Bonds Payable		3,500,000
Dec. 31	Interest Expense	133,000	
	Premium on Bonds Payable		
	($\$140,000 \div 20$)	7,000	
	Interest Payable		
	($\$3,500,000 \times 8\% \times 1/2$)		140,000

(b) 2014

July 1	Cash ($\$3,500,000 \times 98\%$)	3,430,000	
	Discount on Bonds Payable	70,000	
	Bonds Payable		3,500,000
Dec. 31	Interest Expense	143,500	
	Discount on Bonds		
	Payable ($\$70,000 \div 20$)		3,500
	Interest Payable		
	($\$3,500,000 \times 8\% \times 1/2$)		140,000

(c) Premium

Long-term Liabilities

Bonds payable, due 2024.....	\$3,500,000	
Add: Premium on bonds payable.....	<u>133,000</u>	\$3,633,000

Discount

Long-term Liabilities

Bonds payable, due 2024.....	\$3,500,000	
Less: Discount on bonds payable	<u>66,500</u>	\$3,433,500

*PROBLEM 15-9A

		2015			
(a)	Jan. 1	Interest Payable	105,000		
		Cash			105,000
(b)	July 1	Interest Expense	95,000		
		Premium on Bonds Payable			
		(\$200,000 ÷ 20)	10,000		
		Cash			105,000
(c)	July 1	Bonds Payable	1,200,000		
		Premium on Bonds Payable	76,000*		
		Gain on Bond Redemption			
		(\$1,276,000 – \$1,212,000)			64,000
		Cash (\$1,200,000 X 101%)			1,212,000
		*(\$200,000 – \$10,000) X .40 = \$76,000			
(d)	Dec. 31	Interest Expense	57,000		
		Premium on Bonds Payable	6,000**		
		Interest Payable			
		(\$1,800,000 X 7% X 1/2)			63,000

**\$200,000 – \$10,000 – \$76,000 = \$114,000; $\frac{\$114,000}{19} = \$6,000$ or \$10,000 X .60.

PROBLEM 15-1B

		2014		
(a)	June 1	Cash.....	2,000,000	
		Bonds Payable		2,000,000
(b)	Dec. 31	Interest Expense	15,000	
		Interest Payable		
		(\$2,000,000 X 9% X 1/12)		15,000
(c)		Current Liabilities		
		Interest payable		15,000
		Long-term Liabilities		
		Bonds payable due 2019.....		2,000,000
		2015		
(d)	June 1	Interest Payable	15,000	
		Interest Expense		
		(\$2,000,000 X 9% X 5/12).....	75,000	
		Cash		90,000
(e)	Dec. 1	Interest Expense	90,000	
		Cash (\$2,000,000 X 9% X 1/2) ...		90,000
(f)	Dec. 1	Bonds Payable	2,000,000	
		Loss on Bond Redemption	40,000	
		Cash (\$2,000,000 X 1.02).....		2,040,000

PROBLEM 15-2B

(a)		2014			
	Jan. 1		Cash (\$800,000 X 1.05)	840,000	
			Bonds Payable		800,000
			Premium on Bonds Payable.....		40,000
(b)			Current Liabilities		
			Interest payable (\$800,000 X 9% X 1/2)	\$36,000	
			Long-term Liabilities		
			Bond payable, due 2024	\$800,000	
			Add: Premium on bonds payable	<u>36,000</u>	\$836,000
(c)			2016		
	Jan. 1		Bonds Payable.....	\$800,000	
			Premium on Bonds Payable	32,000	
			Loss on Bond Redemption	8,000*	
			Cash (\$800,000 X 1.05).....		840,000
			*(\$840,000 – \$832,000)		

PROBLEM 15-3B

(a)	<u>Semiannual Interest Period</u>	<u>Cash Payment</u>	<u>Interest Expense</u>	<u>Reduction of Principal</u>	<u>Principal Balance</u>
	Issue Date				\$600,000
	1	\$44,149	\$24,000	\$20,149	579,851
	2	44,149	23,194	20,955	558,896
	3	44,149	22,356	21,793	537,103
	4	44,149	21,484	22,665	514,438

		2014		
(b)	Dec. 31	Cash	600,000	
		Mortgage Payable		600,000
		2015		
	June 30	Interest Expense.....	24,000	
		Mortgage Payable.....	20,149	
		Cash.....		44,149
	Dec. 31	Interest Expense.....	23,194	
		Mortgage Payable.....	20,955	
		Cash.....		44,149

		<u>12/31/15</u>
(c)	Current Liabilities	
	Current portion of mortgage payable	\$ 44,458*
	Long-term Liabilities	
	Mortgage payable due 2024	\$514,438**

*(\$21,793 + \$22,665)

**(\$558,896 – \$44,458)

PROBLEM 15-4B

- (a) Naylor Enterprises should record the Mendenhall Co. lease as a capital lease because the lease term is greater than 75% of the estimated economic life of the leased property.

Both the Midas Inc. and Baxter Springs Co. leases should be reported as operating leases because none of the four conditions is met to require treatment as a capital lease.

- (b) The Mendenhall Co. lease is a capital lease. The entry to record the capital lease on January 1, 2014 therefore is as follows:

Leased Asset—Equipment.....	82,000	
Lease Liability		82,000

- (c) The Midas Inc. lease is an operating lease. The entry to record the lease payment in 2014 therefore is as follows:

Rent Expense.....	3,000	
Cash.....		3,000

***PROBLEM 15-5B**

	2014		
(a)	July 1	Cash.....	4,219,600
		Discount on Bonds Payable	280,400
		Bonds Payable	4,500,000

(b) WITHERSPOON SATELLITES
Bond Discount Amortization
Effective-Interest Method—Semiannual Interest Payments
9% Bonds Issued at 10%

	(A)	(B)	(C)	(D)	(E)
Semi-annual Interest Periods	Interest to Be Paid	Interest Expense to Be Recorded	Discount Amortization (B) – (A)	Unamortized Discount (D) – (C)	Bond Carrying Value (\$4,500,000 – D)
Issue date				\$280,400	\$4,219,600
1	\$202,500	\$210,980	\$8,480	271,920	4,228,080
2	202,500	211,404	8,904	263,016	4,236,984
3	202,500	211,849	9,349	253,667	4,246,333

	(c) Dec. 31	Interest Expense	
		(\$4,219,600 X 5%)	210,980
		Discount on Bonds Payable.....	8,480
		Interest Payable	
		(\$4,500,000 X 9% X 1/2)	202,500

	2015		
(d)	July 1	Interest Expense	
		[((\$4,219,600 + \$8,480) X 5%]	211,404
		Discount on Bonds Payable.....	8,904
		Cash	202,500

	(e) Dec. 31	Interest Expense	
		[((\$4,228,080 + \$8,904) X 5%]	211,849
		Discount on Bonds Payable.....	9,349
		Interest Payable.....	202,500

*PROBLEM 15-6B

		2014			
(a)	(1)	July 1	Cash.....	4,543,627	
			Bonds Payable.....		4,000,000
			Premium on Bonds Payable.....		543,627
	(2)	Dec. 31	Interest Expense (\$4,543,627 X 4%)	181,745	
			Premium on Bonds Payable.....	18,255	
			Interest Payable (\$4,000,000 X 5%)		200,000
			2015		
	(3)	July 1	Interest Expense [(\$4,543,627 – \$18,255) X 4%]	181,015	
			Premium on Bonds Payable.....	18,985	
			Cash		200,000
	(4)	Dec. 31	Interest Expense [(\$4,525,372 – \$18,985) X 4%]	180,255	
			Premium on Bonds Payable.....	19,745	
			Interest Payable.....		200,000
(b)			Bonds payable.....	4,000,000	
			Add: Premium on bonds payable	<u>486,642*</u>	4,486,642
			*(\$543,627 – \$18,255 – \$18,985 – \$19,745)		

***PROBLEM 15-6B (Continued)**

(c) Dear _____:

Thank you for asking me to clarify some points about the bonds issued by Ashlock Chemical Company.

- (1) The amount of interest expense reported for 2015 related to these bonds is \$361,270 (\$181,015 + \$180,255).**
- (2) When the bonds are sold at a premium, the effective-interest method will result in more interest expense reported than the straight-line method in 2015. Straight-line interest expense for 2015 is \$345,638 [\$200,000 + \$200,000 – (\$27,181 + \$27,181)].**
- (3) The total cost of borrowing is as shown below:**

Semiannual interest payments	
(\$4,000,000 X 10% X 1/2) = \$200,000 X 20	\$4,000,000
Less: Bond premium (\$4,543,627 – \$4,000,000)	<u>543,627</u>
Total cost of borrowing	<u>\$3,456,373</u>

- (4) The total bond interest expense over the life of the bonds is the same under either method of amortization.**

If you have other questions, please contact me.

Sincerely,

*PROBLEM 15-7B

(a)		2014			
	Jan. 1		Cash (\$6,000,000 X 96%)	5,760,000	
			Discount on Bonds Payable	240,000	
			Bonds Payable		6,000,000

(b) See page 15-49.

(c)		2014			
	July 1		Interest Expense.....	276,000	
			Discount on Bonds		
			Payable (\$240,000 ÷ 40)		6,000
			Cash (\$6,000,000 X 9% X 1/2) ...		270,000

	Dec. 31		Interest Expense.....	276,000	
			Discount on Bonds		
			Payable.....		6,000
			Interest Payable		270,000

		2015			
	Jan. 1		Interest Payable	270,000	
			Cash.....		270,000
	July 1		Interest Expense.....	276,000	
			Discount on Bonds		
			Payable.....		6,000
			Cash (\$6,000,000 X 9% X 1/2).....		270,000
	Dec. 31		Interest Expense.....	276,000	
			Discount on Bonds		
			Payable.....		6,000
			Interest Payable		270,000

***PROBLEM 15-7B (Continued)**

(d) Current Liabilities

Interest payable **\$ 270,000**

Long-term Liabilities

Bonds payable due 2033..... **\$6,000,000**

Less: Discount on bonds payable **216,000** **\$5,784,000**

(b)

Semiannual Interest Periods	(A) Interest to Be Paid (4.5% X \$6,000,000)	(B) Interest Expense to Be Recorded (A) + (C)	(C) Discount Amortization (\$240,000 ÷ 40)	(D) Unamortized Discount (D) – (C)	(E) Bond Carrying Value [\$6,000,000 – (D)]
Issue date				\$240,000	\$5,760,000
1	\$270,000	\$276,000	\$6,000	234,000	5,766,000
2	270,000	276,000	6,000	228,000	5,772,000
3	270,000	276,000	6,000	222,000	5,778,000
4	270,000	276,000	6,000	216,000	5,784,000

*PROBLEM 15-8B

(a)	Jan. 1	Cash (\$4,000,000 X 103%)	4,120,000	
		Premium on Bonds Payable		120,000
		Bonds Payable		4,000,000
	July 1	Interest Expense	154,000	
		Premium on Bonds Payable		
		(\$120,000 ÷ 20)	6,000	
		Cash (\$4,000,000 X 8% X 1/2) ...		160,000
	Dec. 31	Interest Expense	154,000	
		Premium on Bonds Payable	6,000	
		Interest Payable.....		160,000
(b)	Jan. 1	Cash (\$4,000,000 X 96%)	3,840,000	
		Discount on Bonds Payable	160,000	
		Bonds Payable		4,000,000
	July 1	Interest Expense	168,000	
		Discount on Bonds		
		Payable (\$160,000 ÷ 20)		8,000
		Cash		160,000
	Dec. 31	Interest Expense	168,000	
		Discount on Bonds Payable		8,000
		Interest Payable.....		160,000

***PROBLEM 15-8B (Continued)**

(c) Premium

Current Liabilities		
Interest payable.....		\$ 160,000
Long-term Liabilities		
Bonds payable, due 2024	\$4,000,000	
Add: Premium on bonds payable	<u>108,000</u>	\$4,108,000

Discount

Current Liabilities		
Interest payable.....		\$ 160,000
Long-term Liabilities		
Bonds payable, due 2024	\$4,000,000	
Less: Discount on bonds payable	<u>144,000</u>	\$3,856,000

*PROBLEM 15-9B

(a)	Jan. 1	Interest Payable	108,000	
		Cash		108,000
(b)	July 1	Interest Expense	112,500	
		Discount on Bonds Payable ($\$90,000 \div 20$)		4,500
		Cash ($\$2,400,000 \times .045$)		108,000
(c)	July 1	Bonds Payable	800,000	
		Loss on Bond Redemption	44,500	
		Discount on Bonds Payable		28,500*
		Cash ($\$800,000 \times 102\%$)		816,000
		* $(\$90,000 - \$4,500) \times 1/3 = \$28,500$		
(d)	Dec. 31	Interest Expense	75,000	
		Discount on Bonds Payable		3,000*
		Interest Payable		72,000**
		* $(\$90,000 - \$4,500) \times 2/3 = \$57,000$; $\$57,000 \div 19 = \$3,000$ or $\$4,500 \times 2/3 = \$3,000$		
		** $(\$2,400,000 - \$800,000 = \$1,600,000$; $\$1,600,000 \times 4.5\% = \$72,000$)		

COMPREHENSIVE PROBLEM: CHAPTERS 13 TO 15

(a)	1. Cash.....	22,000	
	Preferred Stock (1,000 X \$20)		20,000
	Paid-in Capital in Excess of Par—PS.....		2,000
	2. Cash.....	23,000	
	Common Stock (1,000 X \$10).....		10,000
	Paid-in Capital in Excess of Par—CS		13,000
	3. Treasury Stock (300 X \$49)	14,700	
	Cash		14,700
	4. Cash Dividends.....	6,750*	
	Dividends Payable		6,750
			* $\$20,000 \times .06 + [(3,000 + 1,000 - 300) \times \$1.50]$
	5. Bad Debt Expense	4,650	
	Allowance for Doubtful Accounts (\$5,100 – \$450)		4,650
	6. Depreciation Expense	3,000	
	Accumulated Depreciation— Buildings $[(\$95,000 - \$5,000) \div 30]$		3,000
	7. Depreciation Expense	3,600	
	Accumulated Depreciation— Equipment $[(\$40,000 - \$4,000) \div 10]$		3,600
	8. Unearned Rent Revenue (\$8,000 X 3/4)	6,000	
	Rent Revenue.....		6,000
	9. Interest Expense (\$50,000 X .05).....	2,500	
	Interest Payable		2,500

COMPREHENSIVE PROBLEM (Continued)

(b) **QUIGLEY CORPORATION**
Trial Balance
December 31, 2014

	<u>Debit</u>	<u>Credit</u>
Cash.....	\$ 53,300	
Accounts Receivable.....	51,000	
Inventory	22,700	
Land.....	65,000	
Buildings	95,000	
Equipment.....	40,000	
Allowance for Doubtful Accounts		\$ 5,100
Accumulated Depreciation—Buildings		33,000
Accumulated Depreciation—Equipment.....		18,000
Accounts Payable.....		19,300
Interest Payable		2,500
Dividends Payable.....		6,750
Unearned Rent Revenue		2,000
Bonds Payable (10%)		50,000
Common Stock (\$10 par).....		40,000
Paid-in Capital in Excess of Par—CS		19,000
Preferred Stock (\$20 par)		20,000
Paid-in Capital in Excess of Par—PS		2,000
Retained Earnings		75,050
Treasury Stock.....	14,700	
Cash Dividends.....	6,750	
Sales Revenue		570,000
Rent Revenue.....		6,000
Bad Debts Expense	4,650	
Interest Expense.....	5,000	
Cost of Goods Sold	400,000	
Depreciation Expense	6,600	
Other Operating Expenses.....	39,000	
Salaries and Wages Expense	65,000	
Total.....	<u>\$868,700</u>	<u>\$868,700</u>

COMPREHENSIVE PROBLEM (Continued)

(c)

QUIGLEY CORPORATION
Income Statement
For the Year Ended December 31, 2014

Sales		\$570,000
Cost of Goods Sold		<u>400,000</u>
Gross Profit.....		170,000
Operating Expenses		
Salaries and Wages Expense	\$ 65,000	
Other Operating Expenses	39,000	
Depreciation Expense	6,600	
Bad Debt Expense	<u>4,650</u>	
Total Operating Expenses		<u>115,250</u>
Income From Operations		54,750
Other Revenues and Gains		
Rent Revenue	6,000	
Other Expenses and Losses		
Interest Expense.....	<u>(5,000)</u>	<u>1,000</u>
Net Income		<u><u>\$ 55,750</u></u>

(d)

QUIGLEY CORPORATION
Retained Earnings Statement
For the Year Ended December 31, 2014

Balance, January 1		\$ 75,050
Add: Net income		<u>55,750</u>
		130,800
Less: Cash dividends.....		<u>6,750</u>
Balance, December 31		<u><u>\$124,050</u></u>

COMPREHENSIVE PROBLEM (Continued)

(e) **QUIGLEY CORPORATION**
Balance Sheet
December 31, 2014

Assets

Current assets

Cash.....		\$ 53,300
Accounts receivable.....	\$51,000	
Less: Allowance for doubtful accounts.....	<u>5,100</u>	45,900
Inventory.....		<u>22,700</u>
Total current assets.....		121,900

Property, Plant, and Equipment

Land.....		65,000
Buildings.....	95,000	
Less: Accumulated Depreciation—		
Buildings.....	<u>33,000</u>	62,000
Equipment.....	40,000	
Less: Accumulated Depreciation—		
Equipment.....	<u>18,000</u>	<u>22,000</u>
Total property, plant, and equipment.....		<u>149,000</u>

Total assets.....		<u>\$270,900</u>
-------------------	--	------------------

Liabilities and Stockholders' Equity

Current liabilities

Accounts payable.....		\$ 19,300
Dividends payable.....		6,750
Interest payable.....		2,500
Unearned rent revenue.....		<u>2,000</u>
Total current liabilities.....		30,550

Long-term liabilities

Bond payable (10%).....		<u>50,000</u>
Total liabilities.....		\$ 80,550

COMPREHENSIVE PROBLEM (Continued)

Stockholders' equity	
Paid-in capital	
Capital stock	
6% Preferred stock, \$20 par, 1,000 shares issued.....	\$ 20,000
Common stock \$10 par, 4,000 shares issued, 3,700 shares outstanding	<u>40,000</u>
Total capital stock	60,000
Additional paid-in capital	
In excess of par—preferred stock	\$ 2,000
In excess of par—common stock.....	<u>19,000</u>
Total additional paid-in capital	21,000
Total paid-in capital.....	81,000
Retained earnings	124,050
Total paid-in capital and retained earnings	205,050
Less: Treasury stock (300 common shares)	14,700
Total stockholders' equity	190,350
Total liabilities and stockholders' equity.....	<u>\$270,900</u>

(a) Alternative 1

Interest Period	(A)	(B)	(C)	(D)
	Cash Payment (B) + (C)	Interest Expense (D) X 5% X 6/12	Reduction of Principal (\$2,000 every 6 mo.)	Principal Balance (D) – (C)
Nov. 2014				\$12,000
May 2015	\$ 2,300	\$ 300	\$ 2,000	\$10,000
Nov. 2015	2,250	250	2,000	\$ 8,000
May 2016	2,200	200	2,000	\$ 6,000
Nov. 2016	2,150	150	2,000	\$ 4,000
May 2017	2,100	100	2,000	\$ 2,000
Nov. 2017	<u>2,050</u>	<u>50</u>	<u>2,000</u>	\$ 0
Totals	<u>\$13,050</u>	<u>\$1,050</u>	<u>\$12,000</u>	

CCC15 (Continued)

(b)	Nov. 1	Equipment.....	17,000	
		Cash.....		5,000
		Notes Payable		12,000

(c)

<u>2015</u>					
	May	1	Notes Payable.....	2,000	
			Interest Expense.....	300*	
			Cash.....		2,300
	Nov.	1	Notes Payable.....	2,000	
			Interest Expense.....	250	
			Cash.....		2,250

*See schedule in part (a).

(d)

Current portion*	\$ 4,000
Long-term portion	<u>6,000</u>
	<u>\$10,000</u>

*\$2,000 + \$2,000 = \$4,000

- (a) At September 24, 2011, Apple's total long-term liabilities was \$39,756 million. There was a \$12,364 million increase (\$39,756 – \$27,392) in long-term liabilities during the year.
- (b) Based on Apple's Consolidated Statements of Cash Flows, no long-term debt was redeemed (bought back) during the 2011 fiscal year.

(a)	PepsiCo	Coca-Cola
1. Debt to assets	$\frac{\$51,983}{\$72,882} = 71.3\%$	$\frac{\$48,053^*}{\$79,974} = 60.1\%$
2. Times interest earned	$\frac{\$6,443 + \$2,372 + \$856}{\$856} = 11.3 \text{ times}$	$\frac{\$8,572 + \$2,805 + \$417}{\$417} = 28.3 \text{ times}$

*\$24,283 + \$13,656 + \$5,420 + \$4,694

- (b) The higher the percentage of debt to assets, the greater the risk that a company may be unable to meet its maturing obligations. PepsiCo's 2011 debt to assets ratio was 19% more than Coca-Cola's and it would be considered slightly less able to meet its obligations. The times interest earned ratio provides an indication of a company's ability to meet interest payments. Since Coca-Cola's times interest earned ratio is higher than PepsiCo, Coca-Cola has more ability to meet its interest payments than PepsiCo. However, both times interest earned ratios are excellent and therefore both companies will have no difficulty meeting these payments.

	Amazon	Wal-Mart
1. Debt to assets	$\frac{\$17,521^*}{\$25,278} = 69.3\%$	$\frac{\$117,645^{**}}{\$193,406} = 60.8\%$
2. Times interest earned	$\frac{\$631 + \$291 + \$65}{\$65} = 15.2 \text{ times}$	$\frac{\$15,699 + \$7,944 + \$2,322}{\$2,322^{***}} = 11.2 \text{ times}$

*\$14,896 + \$2,625

***\$2,034 + \$288

**\$193,406 – \$75,761

- (b) The higher the percentage of debt to assets, the greater the risk that a company may be unable to meet its maturing obligations. Amazon's 2011 debt to assets ratio was 14% more than Wal-Mart's and it would be considered slightly less able to meet its obligations. The times interest earned ratio provides an indication of a company's ability to meet interest payments. Since Amazon's times interest earned ratio is higher than Wal-Mart, Amazon has more ability to meet its interest payments than Wal-Mart. However, both times interest earned ratios are excellent and therefore both companies will have no difficulty meeting these payments.

- (a) An ‘A’ rating means that the company has a strong capacity to meet financial commitments, but is somewhat susceptible to adverse economic conditions and changes in circumstances. A ‘C’ rating means that a company is currently highly vulnerable due to obligations and other defined circumstances.**
- (b) Some factors that can change a company’s credit rating are new competition, changes in technology, increases or decreases in debt burdens, changes in the economy or business environment, or in the case of states or municipalities, shifts in populations or changes in taxpayer incomes.**
- (c) To determine whether an investment has merit really depends on particular issues of importance to an individual. For example, a risky investment might have merit to a wealthy investor that can afford to take a chance in order to have the chance of a large gain. That same investment might not have merit to somebody with limited wealth who cannot afford to take large risks. Therefore, credit ratings provide important inputs in determining whether an investment would be of interest to an investor. But a high (or low) credit rating does not necessary mean that a particular investment would be a good or bad investment.**

(a) Face value of bonds	\$2,400,000
Proceeds from sale of bonds (\$2,400,000 X .95).....	<u>2,280,000</u>
Discount on bonds payable	<u>\$ 120,000</u>

Bond discount amortization per year:
 $\$120,000 \div 5 = \$24,000$

Face value of bonds		\$2,400,000
Amount of original discount	\$120,000	
Less: Amortization through January 1, 2014 (2-year)	<u>48,000</u>	<u>72,000</u>
Carrying value of bonds, January 1, 2014.....		<u>\$2,328,000</u>

(b) 1. Bonds Payable	2,400,000	
Discount on Bonds Payable		72,000
Gain on Bond Redemption		328,000*
Cash		2,000,000
(To record redemption of 8% bonds)		

*\$2,328,000 – \$2,000,000

2. Cash	2,000,000	
Bonds Payable.....		2,000,000
(To record sale of 10-year, 11% bonds at par)		

(c) Dear President Glover:

The early redemption of the 8%, 5-year bonds results in recognizing a gain of \$328,000 that increases current year net income by the after-tax effect of the gain. The amount of the liabilities on the balance sheet will be lowered by the issuance of the new bonds and retirement of the 5-year bonds.

BYP 15-5 (Continued)

1. The cash flow of the company as it relates to bonds payable will be adversely affected as follows:

Annual interest payments on the new issue (\$2,000,000 X .11)	\$220,000
Annual interest payments on the 5-year bonds (\$2,400,000 X .08)	<u>192,000</u>
Additional cash outflows per year	<u>\$ 28,000</u>

2. The amount of interest expense shown on the income statement will be higher as a result of the decision to issue new bonds:

Annual interest expense on new bonds	\$220,000
Annual interest expense on 8% bonds:	
Interest payment.....	\$192,000
Discount amortization.....	<u>24,000</u>
Additional interest expense per year.....	<u>\$ 4,000</u>

These comparisons hold for only the 3-year remaining life of the 8%, 5-year bonds. The company must acknowledge either redemption of the 8% bonds at maturity, January 1, 2017, or refinancing of that issue at that time and consider what interest rates will be in 2017 in evaluating a redemption and issuance in 2014.

Sincerely,

To: Sam Masasi

From: I. M. Student

Subject: Bond Financing

(1) The advantages of bond financing over common stock financing include:

- 1. Stockholder control is not affected.**
- 2. Tax savings result.**
- 3. Earnings per share of common stock may be higher.**

(2) The types of bonds that may be issued are:

- 1. Secured or unsecured bonds. Secured bonds have specific assets of the issuer pledged as collateral. Unsecured bonds are issued against the general credit of the borrower.**
- 2. Term or serial bonds. Term bonds mature at a single specified date, while serial bonds mature in installments.**
- 3. Registered or bearer bonds. Registered bonds are issued in the name of the owner, while bearer bonds are not.**
- 4. Convertible bonds, which can be converted by the bondholder into common stock.**
- 5. Callable bonds, which are subject to early retirement by the issuer at a stated amount.**

(3) State laws grant corporations the power to issue bonds after formal approval by the board of directors and stockholders. The terms of the bond issue are set forth in a legal document called a bond indenture. After the bond indenture is prepared, bond certificates are printed.

(a) The stakeholders in the Olathe case are:

- ▶ Ken Iwig, president, founder, and majority stockholder.
- ▶ Barb Lowery, minority stockholder.
- ▶ Other minority stockholders.
- ▶ Existing creditors (debt holders).
- ▶ Future bondholders.
- ▶ Employees, suppliers, and customers.

(b) The ethical issues:

The desires of the majority stockholder (Ken Iwig) versus the desires of the minority stockholders (Barb Lowery and others).

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

Questions:

Is what Ken wants to do legal? Is it unethical? Is Ken's action brash and irresponsible? Who may benefit/suffer if Ken arranges a high-risk bond issue? Who may benefit/suffer if Barb Lowery gains control of Olathe?

(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.

Results will vary depending on article chose by the student. Some common signals identified in articles are: bills more than two months in arrears; must make decisions about who to pay; you have a debt judgment filed against you; spending exceeds income; all credit cards are at their maximum; using one credit card to pay off another.

- (a) Long-term obligations are those scheduled to mature beyond one year (or the operating cycle, if applicable) from the date of an entity's balance sheet.
- (b) The Codification provides the following guidance for disclosure of long-term obligations:

Bonds, mortgages and other long-term debt, including capitalized lease.

- (1) State separately, in the balance sheet or in a note thereto, each issue or type of obligation and such information as will indicate (see §210.4-06):
- (i) The general character of each type of debt including the rate of interest;
 - (ii) the date of maturity, or, if maturing serially, a brief indication of the serial maturities, such as “maturing serially from 1980 to 1990”;
 - (iii) if the payment of principal or interest is contingent, an appropriate indication of such contingency;
 - (iv) a brief indication of priority; and
 - (v) if convertible, the basis.
- (2) The amount and terms (including commitment fees and the conditions under which commitments may be withdrawn) of unused commitments for long-term financing arrangements that would be disclosed under this rule if used shall be disclosed in the notes to the financial statements if significant.

IFRS EXERCISES

IFRS 15-1

The similarities between GAAP and IFRS include: (1) the basic definition of a liability, (2) liabilities are normally reported in the order of their liquidity, and (3) preferred stock that is required to be redeemed at a specific point in time in the future must be reported as debt.

Differences between GAAP and IFRS include: (1) GAAP allows straight line amortization of bond discounts and premiums, but IFRS requires the effective-interest method in all cases, (2) IFRS does not isolate unamortized bond discount or premium in a separate account, (3) IFRS splits the proceeds from convertible bonds into debt and equity components, and (4) GAAP uses a “rules-based” approach to account for leases while IFRS is more conceptual in its approach.

IFRS 15-2

(a)	Jan.	1	Cash (€2,000,000 X .97)	1,940,000	
			Bonds Payable		1,940,000
(b)	Jan.	1	Cash (€2,000,000 X 1.04)	2,080,000	
			Bonds Payable		2,080,000

IFRS 15-3

Cash (£4,000,000 X .99)	3,960,000	
Bonds Payable		3,800,000
Share Premium—Conversion Equity		160,000

- (a) Trade payables represent amounts payable for goods and services received. It took Zetar an average of 48 days to pay its trade payables.**
- (b) Provisions for amounts potentially payable to the vendor's of companies and businesses acquired are established provisionally at fair value at the time of acquisition, based on management's judgment and assessment of the outcome of performance related conditions related to the payments. These assessments typically include consideration of budgets and projections of the results of the entity concerned, which necessarily involve estimations of future revenues, margins and cash flows. These estimates are subject to change as a result of changing economic and competitive conditions. Accordingly the actual consideration paid in the future may be greater or less than the current provisions for contingent consideration.**
- (c) The weighted average interest rate on bank loans and overdrafts was 3.2% in 2011 and 4.0% in 2010.**

