

Practice Quiz Solutions

1. Assume Deere & Company's 2016 10-K reports the following footnote relating to long-term debt. Deere's borrowings include \$200 million, 6.55% debentures (unsecured bonds), due in 2028 (highlighted below).

Long-term borrowings at October 31 consisted of the following in millions of dollars:

Notes and debentures	2016	2015
Medium-term notes:		
Average interest rate of 9.2%—2015 .....		\$ 20
5-7/8% U.S. dollar notes due 2018: (\$250 principal)		
Swapped \$170 to Euro at average variable interest rates of 3.1%-2015 .....		250
7.85% debentures due 2020 .....	\$ 500	500
6.95% notes due 2021: (\$700 principal)		
Swapped to variable interest rates of 5.2%—2016, 3.1%—2015 .....	744	786
8.95% debentures due 2021 .....	200	200
8-1/2% debentures due 2022 .....	200	200
6.55% debentures due 2028 .....	200	200
8.10% debentures due 2030 .....	250	250
7.125% notes due 2031 .....	300	300
Other notes .....	29	22
Total .....	<u>\$2,423</u>	<u>\$2,728</u>

A recent price quote on Deere's 6.55% debentures indicates that Deere's bonds have a market price of 108.104 (108.104% of face value), resulting in a yield to maturity of 5.89%.

How much cash would Deere have to pay to repurchase the 6.55% debentures at the quoted market price of 108.104? (Assume no interest is owed when Deere repurchases the debentures.)

- a. \$200.000 million
- b. \$213.100 million
- c. \$211.780 million
- d. \$216.208 million

Answer: d

Because the bonds trade at a premium in the market (108.104), Deere would be paying more to retire the bonds than their balance sheet (carrying) value. Deere's cash outflow would be \$216.208 million (\$200 million × 108.104%). This would result in a loss on repurchase of debentures of 16.208 million, which would lower current income. This loss would be reported in current income from continuing operations.

2. Assume CVS Corporation discloses the following footnote in its 10-K relating to its debt.

### **BORROWING AND CREDIT AGREEMENTS**

Following is a summary of the Company's borrowings as of the respective balance sheet dates.

In millions	Dec. 31, 2016	Dec. 31, 2015
Commercial paper .....	\$ 253.4	\$ 885.6
5.625% senior notes due 2017 .....	300.0	300.0
3.875% senior notes due 2018 .....	300.0	300.0
4.0% senior notes due 2020 .....	650.0	650.0
4.875% senior notes due 2025 .....	550.0	550.0
8.52% ESOP notes due 2019 .....	114.0	140.9
Mortgage notes payable .....	21.0	14.8
Capital lease obligations .....	0.7	0.8
	<u>2,189.1</u>	<u>2,842.1</u>
Less:		
Short-term debt .....	(253.4)	(885.6)
Current portion of long-term debt .....	<u>(341.6)</u>	<u>(30.6)</u>
	<u>\$1,594.1</u>	<u>\$1,925.9</u>

CVS also discloses the following information.

**Interest expense, net**—Interest expense was \$117.0 million, \$64.4 million and \$53.9 million, and interest income was \$6.5 million, \$5.7 million and \$5.8 million, in 2016, 2015 and 2014, respectively. Interest paid totaled \$135.9 million in 2016, \$70.4 million in 2015 and \$64.9 million in 2014.

What is the average coupon rate (interest paid) and the average effective rate (interest expense) on CVS' long-term debt? (*Hint:* Use the disclosure for interest expense, net.)

- a. Coupon Rate: 4.81%      Effective Rate: 4.80%
- b. Coupon Rate: 5.02%      Effective Rate: 6.12%
- c. Coupon Rate: 5.20%      Effective Rate: 5.03%
- d. Coupon Rate: 5.40%      Effective Rate: 4.65%

Answer: d

CVS paid \$135.9 million for interest in 2016. Its average long-term debt during 2016, is \$2,515.6 million  $[(\$2,189.1 \text{ million} + \$2,842.1 \text{ million}) / 2]$ . Therefore, the average coupon rate is 5.40%, computed as  $\$135.9 / \$2,515.6$ .

CVS reports 2016 interest expense of \$117.0 million on average long-term debt of \$2,515.6 million  $[(\$2,189.1 \text{ million} + \$2,842.1 \text{ million}) / 2]$  for an average effective (yield) rate of 4.65%.

3. On April 30, one year before maturity, Romo Company retired \$300,000 of its 8% bonds payable at the current market price of 102 (102% of the bond face amount, or  $\$300,000 \times 1.02 = \$306,000$ ). The bond book value on April 30 is \$296,100, reflecting an unamortized discount of \$3,900. Bond interest is currently fully paid and recorded up to the date of retirement.

What is the gain or loss on retirement of these bonds?

- a. \$6,000 gain
- b. \$9,900 loss
- c. \$3,900 loss
- d. \$3,900 gain

Answer: b

Amount paid to retire bonds ( $\$300,000 \times 102\%$ ): .....	\$306,000
Book value of retired bonds, net of \$3,900 unamortized discount: .....	<u>296,100</u>
Loss on bond retirement .....	<u>\$ 9,900</u>

4. Which of the following liability-related accounts is not a balance sheet account?
- a. Gain on Bond Retirement
  - b. Discount on Bonds Payable
  - c. Mortgage Notes Payable
  - d. Bonds Payable

Answer: a

Gain on Bond Retirement: Income Statement—included with other (nonoperating) income and expense section.

Discount on Bonds Payable: Balance Sheet—shown as a deduction from Long-term Debt (Bonds Payable); a contra long-term liability in the balance sheet, which is netted in the presentation of long-term liabilities.

Mortgage Notes Payable: Balance Sheet—Long-term liability.

Bonds Payable: Balance Sheet—Long-term liability.

5. Compute total interest accrued for all of the following notes payable owed by Petry Company, as of December 31, 2017 (use a 365-day year).

Lender	Issuance Date	Principal	Coupon Rate (%)	Term
Nissim	10/30/17	\$20,000	11%	120 days
Klein	12/1/17	15,000	8	90 days
Bildersee	12/21/17	17,000	10	60 days

- a. \$1,298.63  
b. \$ 518.91  
c. \$ 528.22  
d. \$ 322.52

Answer: b

Nissim:	$\$20,000 \times 0.11 \times 62/365 =$	\$373.70
Klein:	$\$15,000 \times 0.08 \times 30/365 =$	98.63
Bildersee:	$\$17,000 \times 0.10 \times 10/365 =$	46.58
		<u>\$518.91</u>

6. Bushman, Inc., issues \$400,000 of 8% bonds that pay interest semiannually and mature in 8 years. Compute the bond issue price assuming that the prevailing market rate of interest is 10% per year compounded semiannually.

- a. \$356,648  
b. \$400,000  
c. \$381,293  
d. \$436,172

Answer: a

Selling price for \$400,000, 8% bonds discounted at 10% (5% semiannually):

Present value of principal repayment ( $\$400,000 \times 0.45811^a$ ) .....	\$183,244
Present value of interest payments ( $\$16,000 \times 10.83777^b$ ) .....	<u>173,404</u>
Selling price of bonds .....	<u>\$356,648</u>

<sup>a</sup> Appendix A, Table 1, 16 periods at 5%.      <sup>b</sup> Appendix A, Table 2, 16 periods at 5%.

Calculator inputs: N=16, I/YR=5, PMT=-16,000, FV=-400,000 PV = 356,648.92

7. Bushman, Inc., issues \$400,000 of zero coupon bonds that mature in 8 years. Compute the bond issue price assuming that the bonds' market rate is 8% per year compounded semiannually.
- \$400,000
  - \$228,195
  - \$213,564
  - \$317,462

Answer: c

Selling price of zero coupon bonds discounted at 8%

Present value of principal repayment ( $\$400,000 \times 0.53391^a$ ) = \$213,564

<sup>a</sup>Table 1, 16 periods at 4%

Calculator inputs: N=16, I/YR=4, PMT=0, FV=-400,000, PV = 213,563.27

8. Cizmar Company sells a television that carries a 90-day unconditional warranty against product failure. From prior years' experience, Cizmar estimates that 4% of units sold each period will require repair at an average cost of \$150 per unit. During the current period, Cizmar sold 22,000 units and repaired 200 units.

How much warranty expense must Cizmar report in its current period income statement?

- \$138,000
- \$132,000
- \$102,000
- \$ 30,000

Answer: b

Total expected failures from units sold ( $22,000 \times 0.04$ ).....	880
Average cost per failure .....	<u><math>\times \\$150</math></u>
Total warranty expense for the current period .....	<u>\$132,000</u>

9. Crazy Corporation issued \$300,000 of 10%, 20-year bonds at 106 on January 1, 2012. Interest is payable semiannually on June 30 and December 31. Through January 1, 2017, Crazy amortized \$3,000 of the bond premium. On January 1, 2017, Crazy retires the bonds at 102.

What is the gain on bond retirement at January 1, 2017?

- a. \$ 9,000
- b. \$18,000
- c. \$12,000
- d. \$ 3,000

Answer: a

(in \$000's)

Balance Sheet										Income Statement				
Transaction	Cash Asset	+	Noncash Assets	=	Liabilities	+	Contrib. Capital	+	Earned Capital	Revenues	-	Expenses	=	Net Income
LTD 315 Cash 306 GN 9														
<u>LTD 315</u>					-300 Long-Term Debt									
To retire bonds at 102, remove unamortized premium and report gain on bond retirement*	-306 Cash			=					+9 Retained Earnings	+9 Gain on Bond Retirement	-		=	+9
<u>Cash 306</u>					-15 Premium on Bonds									
<u>GN 9</u>														

\* Retirement price = \$306,000 = \$300,000 × 102%  
 Original premium = (\$300,000 × 106%) - \$300,000 = \$18,000  
 Unamortized premium = \$18,000 - \$3,000 = \$15,000

10. Schwer, Inc. issued \$500,000 of 10%, 15-year bonds at 95 on July 1, 2012. Interest is payable semiannually on December 31 and June 30. Through June 30, 2017, Schwer amortized \$6,000 of the bond discount. On July 1, 2017, Schwer retired the bonds at 102.

Calculate the loss on bond retirement at July 1, 2017.

- a. \$29,000
- b. \$25,000
- c. \$ 6,000
- d. \$19,000

Answer: a

Balance Sheet							Income Statement		
Transaction	Cash Asset	+ Noncash Assets	=	Liabilities	+ Contrib. Capital	+ Earned Capital	Revenues	- Expenses	= Net Income
LTD 481 LS 29 Cash 510									
To retire bonds at 102, remove unamortized discount and report loss on bond retirement*	-510 Cash		=	-500 Long-Term Debt  +19 Discount on Bonds		-29 Retained Earnings		29 Loss on Bond Retirement	= -29
LTD 481 LS 29 Cash 510									

\* Retirement price = \$510,000 = \$500,000 × 102%  
 Original discount = (100% – 95%) × \$500,000 = \$25,000  
 Unamortized discount = \$25,000 - \$6,000 = \$19,000