**Chapter 10**

**EXERCISES**

**Exercise 10-1 (15 minutes)**

**1. Semiannual cash interest payment = $3,400,000 x 9% x 1/2 = $153,000**

**2. Journal entries**

|  |  |  |  |
| --- | --- | --- | --- |
| **(a)** |  |  |  |
| **Jan. 1** | **Cash**  | **3,400,000** |  |
|  |  **Bonds Payable**  |  | **3,400,000** |
|  |  ***Sold bonds at par.*** |  |  |
|  |  |  |  |
| **(b)** |  |  |  |
| **June 30** | **Bond Interest Expense**  | **153,000** |  |
|  |  **Cash**  |  | **153,000** |
|  |  ***Paid semiannual interest on bonds.*** |  |  |
|  |  |  |  |
| **(c)** |  |  |  |
| **Dec. 31** | **Bond Interest Expense**  | **153,000** |  |
|  |  **Cash**  |  | **153,000** |
|  |  ***Paid semiannual interest on bonds.*** |  |  |

**3*.***

|  |  |  |  |
| --- | --- | --- | --- |
| **(a)** |  |  |  |
| **Jan. 1** | Cash\*  | **3,332,000** |  |
|  | **Discount on Bonds Payable**  | **68,000** |  |
|  |  **Bonds Payable**  |  | **3,400,000** |
|  |  ***Sold bonds at 98. \*($3,400,000 x 0.98)*** |  |  |
|  |  |  |  |
| **(b)** |  |  |  |
| **Jan. 1** | Cash\*  | **3,468,000** |  |
|  |  **Premium on Bonds Payable**  |  | **68,000** |
|  |  **Bonds Payable**  |  | **3,400,000** |
|  |  ***Sold bonds at 102. \*($3,400,000 x 1.02)*** |  |  |

Exercise 10-2 (30 minutes)

**1. Discount = Par value - Issue price = $180,000 - $170,862 = $9,138**

2. Total bond interest expense over the life of the bonds

|  |  |
| --- | --- |
| **Amount repaid** |  |
|  **Six payments of $7,200\***  | **$ 43,200** |
|  **Par value at maturity**  |  **180,000** |
|  **Total repaid**  | **223,200** |
| **Less amount borrowed**  |  **(170,862)** |
| **Total bond interest expense**  | **$ 52,338** |
| ***\*180,000 x 0.08 x ½ = $7,200*** |  |

 or:

|  |  |
| --- | --- |
| **Six payments of $7,200**  | **$ 43,200** |
| **Plus discount**  |  **9,138** |
| **Total bond interest expense**  | **$ 52,338** |

**3. Straight-line amortization table ($9,138/6 = $1,523)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Semiannual** **Period-End** | **Unamortized Discount**  | **Carrying** **Value** |
| **(0)** |  **1/01/2018**  | **$9,138** | **$170,862** |
| **(1)** |  **6/30/2018**  |  **7,615** |  **172,385** |
| **(2)** | **12/31/2018**  |  **6,092** |  **173,908** |
| **(3)** |  **6/30/2019**  |  **4,569** |  **175,431** |
| **(4)** | **12/31/2019**  |  **3,046** |  **176,954** |
| **(5)** |  **6/30/2020**  |  **1,523** |  **178,477** |
| **(6)** | **12/31/2020**  |  **0** |  **180,000** |

**Exercise 10-3 (25 minutes)**

**1. Semiannual cash interest payment = $800,000 x 6% x ½ year = $24,000**

**2. Number of payments = 10 years x 2 per year = 20 semiannual payments**

**3. The 6% contract rate is less than the 8% market rate; therefore, the bonds are issued at a discount.**

**4. Estimation of the market price at the issue date**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cash Flow | **Table**  | **Table Value\*** | **Amount** | **Present Value** |
| Par (maturity) value  | **B.1** |  **0.4564** | **$800,000** | **$365,120** |
| **Interest (annuity)**  | **B.3** | **13.5903** |  **24,000** |  **326,167** |
| **Price of bonds**  |  |  |  | **$691,287** |

**\* Table values are based on a discount rate of 4% (half the annual market rate) and 20 periods (semiannual payments).**

|  |  |  |  |
| --- | --- | --- | --- |
| **5.** | **Cash**  | **691,287** |  |
|  | **Discount on Bonds Payable**  | **108,713** |  |
|  |  **Bonds Payable**  |  | **800,000** |
|  |  ***Sold bonds at a discount on the stated issue date.*** |  |

**Exercise 10-4 (20 minutes)**

**2018**

|  |  |  |  |
| --- | --- | --- | --- |
| **(a)** |  |  |  |
| **Dec. 31** | **Cash**  | **186,534** |  |
|  | **Discount on Bonds Payable**  | **13,466** |  |
|  |  **Bonds Payable**  |  | **200,000** |
|  |  ***Sold bonds at discount.*** |  |  |
| **2019** |  |  |  |
| **(b)** |  |  |  |
| **June 30** | **Bond Interest Expense**  | **7,684** |  |
|  |  **Discount on Bonds Payable\*\***  |  | **1,684** |
|  |  **Cash\***  |  | **6,000** |
|  |  ***Paid semiannual interest and record amor-tization. \*$200,000 x6% x1/2 \*\*13,466 - $11,782*** |  |  |
| **(c)** |  |  |  |
| **Dec. 31** | **Bond Interest Expense**  | **7,684** |  |
|  |  **Discount on Bonds Payable\*\***  |  | **1,684** |
|  |  **Cash\***  |  | **6,000** |
|  |  ***Paid semiannual interest and record amor-tization. \*$200,000 x6% x1/2 \*\*$11,782 - $10,098*** |  |  |

**Exercise 10-5 (35 minutes)**

**2018**

|  |  |  |  |
| --- | --- | --- | --- |
| **(a)** |  |  |  |
| **Dec. 31** | **Cash**  | **188,000** |  |
|  | **Discount on Bonds Payable**  | **12,000** |  |
|  |  **Bonds Payable**  |  | **200,000** |
|  |  ***Sold bonds at discount.*** |  |  |
|  |  |  |  |
| **(b)** |  |  |  |
| **2019** |  |  |  |
| **June 30** | **Bond Interest Expense**  | **8,000** |  |
|  |  **Discount on Bonds Payable\***  |  | **3,000** |
|  |  **Cash\*\***  |  | **5,000** |
|  |  ***Paid semiannual interest and record amor-tization. \*$12,000-$9,000 \*\*$200,000 x 5% x ½*** |  |  |
|  |  |  |  |
| **Dec. 31** | **Bond Interest Expense**  | **8,000** |  |
|  |  **Discount on Bonds Payable\***  |  | **3,000** |
|  |  **Cash\*\***  |  | **5,000** |
|  |  ***Paid semiannual interest and record amor-tization. \*$9,000- $6,000 \*\*$200,000 x 5% x ½*** |  |  |
|  |  |  |  |
| **2020** |  |  |  |
| **June 30** | **Bond Interest Expense**  | **8,000** |  |
|  |  **Discount on Bonds Payable\***  |  | **3,000** |
|  |  **Cash\*\***  |  | **5,000** |
|  |  ***Paid semiannual interest and record amor-tization. \*$6,000-$3,000 \*\*$200,000 x 5% x ½*** |  |  |
|  |  |  |  |
| **Dec. 31** | **Bond Interest Expense**  | **8,000** |  |
|  |  **Discount on Bonds Payable\***  |  | **3,000** |
|  |  **Cash\*\***  |  | **5,000** |
|  |  ***Paid semiannual interest and record amor-tization. \*$3,000 - $0 \*\*$200,000 x 5% x ½*** |  |  |
|  |  |  |  |
| **(c)** |  |  |  |
| **Dec. 31** | **Bonds Payable**  | **200,000** |  |
|  |  **Cash**  |  | **200,000** |
|  |  ***Record maturity and payment of bonds.*** |  |  |

**Exercise 10-6 (20 minutes)**

**2017**

|  |  |  |  |
| --- | --- | --- | --- |
| **(a)** |  |  |  |
| **Dec. 31** | **Cash**  | **216,222** |  |
|  |  **Premium on Bonds Payable**  |  | **16,222** |
|  |  **Bonds Payable**  |  | **200,000** |
|  |  ***Sold bonds at premium.*** |  |  |
| **2018** |  |  |  |
| **(b)** |  |  |  |
| **June 30** | **Bond Interest Expense**  | **8,378** |  |
|  | **Premium on Bonds Payable\***  | **1,622** |  |
|  |  **Cash\*\***  |  | **10,000** |
|  |  ***Paid semiannual interest and record amor-tization. \*$16,222- $14,600 \*\*$200,000 x 10% x ½*** |  |  |
| **(c)** |  |  |  |
| **Dec. 31** | **Bond Interest Expense**  | **8,378** |  |
|  | **Premium on Bonds Payable\***  | **1,622** |  |
|  |  **Cash\*\***  |  | **10,000** |
|  |  ***Paid semiannual interest and record amor-tization. \*$14,600-$12,978 \*\*$200,000 x 10% x ½*** |  |  |

Exercise 10-7 (30 minutes)

**1. Premium = Issue price - Par value = $409,850 - $400,000 = $9,850**

**2. Total bond interest expense over the life of the bonds**

|  |  |
| --- | --- |
| **Amount repaid** |  |
|  **Six payments of $26,000\***  | **$156,000** |
|  **Par value at maturity**  |  **400,000** |
|  **Total repaid**  | **556,000** |
| **Less amount borrowed**  |  **(409,850)** |
| **Total bond interest expense**  | **$146,150** |
| ***\*$400,000 x 0.13 x ½ = $26,000*** |  |

**or**

|  |  |
| --- | --- |
| **Six payments of $26,000**  | **$156,000** |
| **Less premium**  |  **(9,850)** |
| **Total bond interest expense**  | **$146,150** |

**3. Straight-line amortization table ($9,850/6 = $1,642)**

|  |  |  |
| --- | --- | --- |
| **Semiannual****Interest Period-End** | **Unamortized****Premium** | **Carrying** **Value** |
|  **1/01/2018** | **$9,850** | **$409,850** |
|  **6/30/2018** |  **8,208** |  **408,208** |
| **12/31/2018** |  **6,566** |  **406,566** |
|  **6/30/2019** |  **4,924** |  **404,924** |
| **12/31/2019** |  **3,282** |  **403,282** |
|  **6/30/2020** |  **1,640\*** |  **401,640** |
| **12/31/2020** |  **0** |  **400,000** |

\*Adjusted for rounding.

Exercise 10-8 (25 minutes)

**1. Semiannual cash interest payment = $150,000 x 10% x ½ year = $7,500**

**2. Number of payments = 5 years x 2 per year = 10 semiannual payments**

**3. The 10% contract rate is greater than the 8% market rate; therefore, the bonds are issued at a premium.**

**4. Estimation of the market price at the issue date**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cash Flow | **Table**  | **Table Value\*** | **Amount** | **Present Value** |
| Par (maturity) value  | **B.1** | **0.6756** | **$150,000** | **$101,340** |
| **Interest (annuity)**  | **B.3** | **8.1109** |  **7,500** |  **60,832** |
| **Price of bonds**  |  |  |  | **$162,172** |

**\* Table values are based on a discount rate of 4% (half the annual market rate) and 10 periods (semiannual payments).**

|  |  |  |  |
| --- | --- | --- | --- |
| **5.** | **Cash**  | **162,172** |  |
|  |  **Premium on Bonds Payable**  |  | **12,172** |
|  |  **Bonds Payable**  |  | **150,000** |
|  |  ***Sold bonds at a premium on the stated issue date.***  |  |

Exercise 10-9 (20 minutes)

1. Cash proceeds from sale of bonds at issuance

 **$700,000 x 97.75% = $684,250**

2. Discount at issuance

|  |  |
| --- | --- |
| Par value  | **$700,000** |
| **Cash issue price (from part *1*)**  |  **(684,250)** |
| **Discount at issuance**  | **$ 15,750** |

3. Total amortization for first 6 years

 **The first six years (from 1/1/2018 to 12/31/2023) equals 40% of the bonds’ 15-year life. Therefore, the total amortization equals 40% of the total discount (since straight-line amortization is being used), which is $15,750 x 40%, or $6,300.**

4. Carrying value of the bonds at 12/31/2023

|  |  |
| --- | --- |
| **Discount at issuance (from part *2*)**  | **$ 15,750** |
| **Less amortization (from part *3*)**  |  **(6,300)** |
| **Remaining discount**  | **$ 9,450** |

|  |  |  |
| --- | --- | --- |
|  | **Entire Group** | **Retired 20%** |
| Par value  | **$700,000** | **$140,000** |
| **Remaining discount**  |  **(9,450)** |  **(1,890)** |
| **Carrying value**  | **$690,550** | **$138,110** |

5. Cash purchase price

 **($700,000 x 20%) x 104.5% = $146,300**

6. Loss on retirement

|  |  |
| --- | --- |
| **Cash paid (from part *5*)**  | **$ 146,300** |
| **Carrying value (from part *4*)**  |  **(138,110)** |
| Loss on retirement  | **$ 8,190** |

7. Journal entry at retirement for 20% of bonds

**2024**

|  |  |  |  |
| --- | --- | --- | --- |
| **Jan. 1** | **Bonds Payable**  | **140,000** |  |
|  | **Loss on Retirement of Bonds Payable**  | **8,190** |  |
|  |  **Discount on Bonds Payable**  |  | **1,890** |
|  |  **Cash**  |  | **146,300** |
|  |  ***Record the retirement of bonds.*** |  |  |

**Exercise 10-10 (20 minutes)**

**Background (given): Amount of each payment = Initial note balance / Table B.3 PV factor**

 **= $100,000 / 3.3872 = $29,523**

**Amortization table for the loan**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Payments** |  |
| **Period Ending****Date** | **(A)** **Beginning Balance [Prior (E)]** | **(B)** **Debit Interest Expense [7% x (A)]** | **+** | **(C)** **Debit Notes Payable [(D) - (B)]** | **=** | **(D)** **Credit** **Cash** **[computed]** | **(E)** **Ending Balance [(A) - (C)]** |
| **2018**  | **$100,000** | **$ 7,000** |  | **$ 22,523** |  | **$ 29,523** | **$77,477** |
| **2019**  | **77,477** | **5,423** |  | **24,100** |  | **29,523** | **53,377** |
| **2020**  | **53,377** | **3,736** |  | **25,787** |  | **29,523** | **27,590** |
| **2021**  | **27,590** |  **1,933\*** |  |  **27,590** |  |  **29,523** | **0** |
|  |  | **$18,092** |  | **$100,000** |  | **$118,092** |  |

 **\*Adjusted for rounding.**

**Exercise 10-11 (20 minutes)**

**2018**

|  |  |  |  |
| --- | --- | --- | --- |
| **Jan. 1** | **Cash**  | **100,000** |  |
|  |  **Notes Payable**  |  | **100,000** |
|  |  ***Borrowed $100,000 by signing a 7%  installment note.*** |  |  |
|  |  |  |  |
| **2018** |  |  |  |
| **Dec. 31** | **Interest Expense**  | **7,000** |  |
|  | **Notes Payable**  | **22,523** |  |
|  |  **Cash**  |  | **29,523** |
|  |  ***Record first installment payment.*** |  |  |
|  |  |  |  |
| **2019** |  |  |  |
| **Dec. 31** | **Interest Expense**  | **5,423** |  |
|  | **Notes Payable**  | **24,100** |  |
|  |  **Cash**  |  | **29,523** |
|  |  ***Record second installment payment.*** |  |  |
|  |  |  |  |
| **2020** |  |  |  |
| **Dec. 31** | **Interest Expense**  | **3,736** |  |
|  | **Notes Payable**  | **25,787** |  |
|  |  **Cash**  |  | **29,523** |
|  |  ***Record third installment payment.*** |  |  |
|  |  |  |  |
| **2021** |  |  |  |
| **Dec. 31** | **Interest Expense**  | **1,933** |  |
|  | **Notes Payable**  | **27,590** |  |
|  |  **Cash**  |  | **29,523** |
|  |  ***Record fourth installment payment.*** |  |  |

**Exercise 10-12 (15 minutes)**

**1a. Current debt-to-equity ratio = $220,000 / $400,000\* = 0.55**

***\*Total equity = $620,000 - $220,000 = $400,000***

**1b. Potential debt-to-equity ratio = $720,000\* / $400,000 = 1.80**

***\*Total liabilities = $220,000 + $500,000 = $720,000***

**2. Montclair’s risk will increase because it will have more debt. That debt (plus interest) must be repaid even if the project does not work out as planned and provide a sufficient profit. However, if the project does provide adequate returns, Montclair may be better off in the long run by borrowing the funds.**

**Exercise 10-13B (30 minutes)**

**1. Discount = Par value - Issue price = $500,000 - $463,140 = $36,860**

2. Total bond interest expense over the life of the bonds

|  |  |
| --- | --- |
| **Amount repaid** |  |
|  **Six payments of $22,500\***  | **$135,000** |
|  **Par value at maturity**  |  **500,000** |
|  **Total repaid**  | **635,000** |
| **Less amount borrowed**  |  **(463,140)** |
| **Total bond interest expense**  | **$171,860** |
| ***\*$500,000 x 0.09 x ½ = $22,500*** |  |

 **or**

|  |  |
| --- | --- |
| **Six payments of $22,500**  | **$135,000** |
| **Plus discount**  |  **36,860** |
| **Total bond interest expense**  | **$171,860** |

3. Effective interest amortization table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Semiannual****Interest Period-End** | **(A)** **Cash Interest Paid****[4.5% x $500,000]** | **(B)** **Bond Interest Expense****[6% x Prior (E)]** | **(C)** **Discount Amortization****[(B) - (A)]** | **(D)****Unamortized****Discount****[Prior (D) - (C)]** | **(E)** **Carrying** **Value****[$500,000 - (D)]** |
|  **1/01/2018** |  |  |  | **$36,860** | **$463,140** |
|  **6/30/2018** | **$ 22,500** | **$ 27,788** | **$ 5,288** |  **31,572** |  **468,428** |
| **12/31/2018** | **22,500** |  **28,106** |  **5,606** |  **25,966** |  **474,034** |
|  **6/30/2019** | **22,500** |  **28,442** |  **5,942** |  **20,024** |  **479,976** |
| **12/31/2019** | **22,500** |  **28,799** |  **6,299** |  **13,725** |  **486,275** |
|  **6/30/2020** | **22,500** |  **29,176** |  **6,676** |  **7,049** |  **492,951** |
| **12/31/2020** |  **22,500** |  **29,549 \*** |  **7,049** |  **0** |  **500,000** |
|  | **$135,000** | **$171,860** | **$36,860** |  |  |

**\*Adjusted for rounding.**

Exercise 10-14B (30 minutes)

**1. Premium = Issue price - Par value = $409,850 - $400,000 = $9,850**

**2. Total bond interest expense over the life of the bonds**

|  |  |
| --- | --- |
| **Amount repaid** |  |
|  **Six payments of $26,000\***  | **$ 156,000** |
|  **Par value at maturity**  |  **400,000** |
|  **Total repaid**  | **556,000** |
| **Less amount borrowed**  |  **(409,850)** |
| **Total bond interest expense**  | **$ 146,150** |
| ***\*$400,000 x 0.13 x ½ = $26,000*** |  |

**or**

|  |  |
| --- | --- |
| **Six payments of $26,000**  | **$ 156,000** |
| **Less premium**  |  **(9,850)** |
| **Total bond interest expense**  | **$ 146,150** |

**3. Effective interest amortization table**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Semiannual****Interest Period-End** | **(A)** **Cash Interest Paid****[6.5% x $400,000]** | **(B)** **Bond Interest Expense****[6% x Prior (E)]** | **(C)** **Premium Amortization****[(A) - (B)]** | **(D)****Unamortized****Premium****[Prior (D) - (C)]** | **(E)** **Carrying** **Value****[400,000 + (D)]** |
|  **1/01/2018** |  |  |  | **$9,850** | **$409,850** |
|  **6/30/2018** | **$ 26,000** | **$ 24,591** | **$1,409** |  **8,441** |  **408,441** |
| **12/31/2018** |  **26,000** |  **24,506** |  **1,494** |  **6,947** |  **406,947** |
|  **6/30/2019** |  **26,000** |  **24,417** |  **1,583** |  **5,364** |  **405,364** |
| **12/31/2019** |  **26,000** |  **24,322** |  **1,678** |  **3,686** |  **403,686** |
|  **6/30/2020** |  **26,000** |  **24,221** |  **1,779** |  **1,907** |  **401,907** |
| **12/31/2020** |  **26,000** |  **24,093\*** |  **1,907** |  **0** |  **400,000** |
|  | **$156,000** | **$146,150** | **$9,850** |  |  |

 **\*Adjusted for rounding.**

**Exercise 10-15 (40 minutes)**

1. Straight-line amortization table ([$100,000-$95,952]/8 = $506)

|  |  |  |
| --- | --- | --- |
| Semiannual**Period-End** | **Unamortized Discount †** | **Carrying****Value** |
|  **1/01/2018(issuance)**  | **$4,048** | **$95,952** |
|  **6/30/2018**  | **3,542** | **96,458** |
| **12/31/2018**  | **3,036** | **96,964** |
|  **6/30/2019**  | **2,530** | **97,470** |
| **12/31/2019**  | **2,024** | **97,976** |
|  **6/30/2020**  | **1,518** | **98,482** |
| **12/31/2020**  | **1,012** | **98,988** |
|  **6/30/2021**  | **506** | **99,494** |
| **12/31/2021**  | **0** | **100,000** |

 **† Supporting computations**

|  |  |
| --- | --- |
| **Eight payments of $3,500\*\***  | **$ 28,000** |
| **Par value at maturity**  |  **100,000** |
| **Total repaid**  | **128,000** |
| **Less amount borrowed**  |  **(95,952)** |
| **Total bond interest expense**  | **$ 32,048** |
| ***\*\*$100,000 x 0.07 x ½ = $3,500*** |  |

 **or**

|  |  |
| --- | --- |
| **Eight payments of $3,500**  | **$ 28,000** |
| **Plus discount**  |  **4,048** |
| **Total bond interest expense**  | **$ 32,048** |

**Semiannual straight-line interest expense = $32,048 / 8 = $4,006**

**Semiannual bond discount amortization = $4,048 / 8 = $506**

**Exercise 10-15 (*Concluded*)**

**2.**

**2018**

|  |  |  |  |
| --- | --- | --- | --- |
| **June 30** | **Bond Interest Expense**  | **4,006** |  |
|  |  **Discount on Bonds Payable**  |  | **506** |
|  |  **Cash**  |  | **3,500** |
|  |  ***Record 6 months’ interest and discount amortization.*** |  |  |
|  |  |  |  |
| **Dec. 31** | **Bond Interest Expense**  | **4,006** |  |
|  |  **Discount on Bonds Payable**  |  | **506** |
|  |  **Cash**  |  | **3,500** |
|  |  ***Record 6 months’ interest and discount amortization.*** |  |  |
| **3.** |  |  |  |
| **2021** |  |  |  |
| **Dec. 31** | **Bonds Payable**  | **100,000** |  |
|  |  **Cash**  |  | **100,000** |
|  |  ***Paid par value at maturity.***  ***(Assume interest was already recorded.)*** |  |  |

**Exercise 10-16 (20 minutes)**

**2018**

|  |  |  |  |
| --- | --- | --- | --- |
| **Jan. 1** | **Cash**  | **3,400,000** |  |
|  |  **Bonds Payable**  |  | **3,400,000** |
|  |  ***Sold bonds at par.*** |  |  |
|  |  |  |  |
| **June 30** | **Bond Interest Expense**  | **153,000** |  |
|  |  **Cash**  |  | **153,000** |
|  |  ***Paid semiannual interest. $3,400,000 x 0.09 x ½***  |  |  |
|  |  |  |  |
| **Dec. 31** | **Bond Interest Expense**  | **153,000** |  |
|  |  **Cash**  |  | **153,000** |
|  |  ***Paid semiannual interest. $3,400,000 x 0.09 x ½***  |  |  |
| **2021** |  |  |  |
| **Dec. 31** | **Bonds Payable**  | **3,400,000** |  |
|  |  **Cash**  |  | **3,400,000** |
|  |  ***Paid par value at maturity.*** ***(Assume interest was already recorded.)*** |  |  |

**Exercise 10-17C (10 minutes)**

**1. Operating lease 2. Finance lease 3. Finance lease**

**Exercise 10-18C (20 minutes)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **1.** | **Jan. 1** | **Right-of-Use Asset**  | **41,000** |  |
|  |  |  **Lease Liability**  |  | **41,000** |
|  |  |  ***Record right-of-use lease asset.*** |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **2.** | **Jan. 1** | **Lease Liability**  | **10,000** |  |
|  |  |  **Cash**  |  | **10,000** |
|  |  |  ***Record beginning-year lease payment.*** |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **3.** | **Dec. 31** | **Amortization Expense—Right-of-Use Asset**  | **8,200** |  |
|  |  |  **Accum. Amortization—Right-of-Use Asset**  |  | **8,200** |
|  |  |  ***Record amortization ($41,000 / 5 years).*** |  |  |

**Exercise 10-19C (15 minutes)**

 ***[Note: 12% / 12 months = 1% per month as the relevant interest rate.]***

***Option 1*: $1,750 per month for 25 months = $1,750 x 22.0232 = $38,541**

***Option 2*: $1,500 per month for 25 months + $5,000 =**

**($1,500 x 22.0232) + $5,000 = $38,035**

***Option 3*: = $38,500**

***Analysis*: Option 2 has the lowest present value at $38,035 and, thus, is the best lease deal for the customer.**

**Exercise 10-20 (20 minutes)**

**(amounts in euros millions)**

|  |  |  |  |
| --- | --- | --- | --- |
| **1.** | **Cash**  | **1,670** |  |
|  | **Discount on Loans and Borrowings**  | **12** |  |
|  |  **Loans and Borrowings**  |  | **1,682** |
|  |  ***Issued liabilities at discount.*** |  |  |
|  |  |  |  |
| **2.** | **Loans and Borrowings**  | **948** |  |
|  | **Premium on Loans and Borrowings**  | **24** |  |
|  | **Loss on Loans and Borrowings Retirement**  | **29** |  |
|  |  **Cash**  |  | **1,001** |
|  |  ***Retirement of loans and borrowings pre-maturity.*** |  |  |
|  |  |  |  |

**3. Heineken’s Loans and Borrowings carried a premium of €658 as of December 31, 2016. This is computed as its carrying value of €10,954 less its par value of €10,296.**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

**4. The contract rate was higher than the market rate at issuance. This is implied from the higher carrying value of its loans and borrowings relative to the lower par value.**

 **(Recall: Contract rate > Market rate 🡪 Premium)**

**Exercise 10-21 (20 minutes)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **1****Don’t Expand** | **2****Debt Financing** | **3****Equity Financing** |
| **Income before interest expense**  | **$ 50,000** | **$ 75,000** | **$ 75,000** |
| **Interest expense**  | **$ 0** | **$ 6,400** | **$ 0** |
| **Net income**  | **$ 50,000** | **$ 68,600** | **$ 75,000** |
| **Equity**  | **$200,000** | **$200,000** | **$280,000** |
| **Return on equity**  | **25%** | **34.3%** | **26.8%** |