

FINAL EXAMINATION (REGULAR)  
Fall 2014

Name: \_\_\_\_\_ ID: \_\_\_\_\_

**Duration: 3 hours**

**Instructions (very important):**

1. This examination paper consists of **11 pages including this page**. Please make sure your copy has all pages before commencing to write.
2. Make sure that your FULL name (last name first), Student ID and Section Letter are on the three documents: computer input sheet, answer booklet and examination paper.
3. You must answer the multiple choice questions by using the **computer input sheet**; darken the letter you choose **in pencil** on the computer input sheet. Write all your answers to the other questions in the **examination answer booklet**. You may answer the questions in any order you prefer. **Only the answers on the computer input sheet and in the examination booklet will be graded.**
4. Read the questions carefully and budget your time wisely.
5. Show all calculations on the examination booklet, and omit narratives for journal entries. Using abbreviated account names, headings, subheadings, totals and subtotals is not recommended, and it may be subject to mark deduction.
6. This is a closed book examination. However, a silent hand-held (not graphical or programmable) calculator and one standard language (not electronic) dictionary are permitted.
7. **Invigilators will not answer questions.** If you think there is an **error** in the question, ask your instructor when he/she visits the exam room.
8. Return the exam along with the computer input sheet and answer booklet(s) when you have finished.

| Question | Topic                   | Total Marks |
|----------|-------------------------|-------------|
| 1        | Multiple Choice         | 21          |
| 2        | Long-Lived Assets       | 19          |
| 3        | Financial Statements    | 26          |
| 4        | Liabilities             | 19          |
| 5        | Statement of Cash Flows | 15          |
|          | Total                   | 100         |

**Question 1: Multiple Choice**

**(21 marks; 33 minutes)**

For each of the following multiple choice question, choose the letter that corresponds to the **best** answer, and **show your answer on the computer input sheet**. Each correct answer is worth 1.5 marks.

1. Which of the following statements accurately explains why the board of directors of a company that is facing financial difficulties might issue a 2-for-1 stock split rather than declare a 100% stock dividend?
  - a. A stock split would not reduce the market price per share, whereas a stock dividend would.
  - b. A stock split would reduce the market price per share, whereas a stock dividend would not.
  - c. A stock split would increase total shareholders' equity, whereas a stock dividend would not.
  - d. A stock split would not reduce retained earnings, whereas a stock dividend would.
  
2. If bonds are issued at a premium, the stated interest rate is
  - a. Higher than the market interest rate.
  - b. Lower than the market interest rate.
  - c. Too low to attract investors.
  - d. The same as the market interest rate.
  
3. Which of the following statements is true?
  - a. The inventory turnover ratio is an important solvency test for retail companies.
  - b. The debt-to-equity ratio is a measure of liquidity.
  - c. Tests of profitability focus on measuring the overall success of the company.
  - d. Liquidity tests focus on the ability of a company to pay both short-term and long-term debts.
  
4. The statement that "Bond prices vary inversely with changes in the market interest rate" means that if the
  - a. Market interest rate increases, the stated interest rate will decrease.
  - b. Stated interest rate increases, then bond prices will go down.
  - c. Market interest rate decreases, then bond prices will go up.
  - d. Stated interest rate increases, the market interest rate will decrease.
  
5. The cumulative effect of the declaration and payment of a cash dividend on a company's financial statements is to
  - a. Decrease both total liabilities and shareholders' equity.
  - b. Increase both total expenses and total liabilities.
  - c. Increase both total assets and shareholders' equity.
  - d. Decrease both total assets and shareholders' equity.
  
6. Kashflo Inc. reported a decrease in its Supplies Inventory account and an increase in the Trade Payables account during fiscal year 2013. When the indirect method is used, what does the company do with the changes in these accounts to calculate net cash flows from operating activities?
  - a. Add both changes to net earnings.
  - b. Add to net earnings the increase in Trade Payables and subtract the decrease in Supplies Inventory.
  - c. Subtract both changes from net earnings.
  - d. Add to net earnings the decrease in Supplies Inventory and subtract the increase in Trade Payables.

7. Cinno Company reported net earnings of \$20,000 for the year ended December 31, 2013. During the year, inventories decreased by \$7,000, trade payables decreased by \$8,000, depreciation expense was \$10,000, and trade receivables increased by \$6,500. Net cash provided by operations in 2013, computed using the indirect method, was:
- \$10,500.
  - \$22,500.
  - \$38,500.
  - \$51,500.
8. Which of the following adjusting journal entries would change the *Net Cash Flows from Operating Activities* of the statement of cash flows?
- Recording bad debt expense.
  - Recording amortization expense.
  - Recording bank service fees.
  - None of the above.
9. A company has 20,000 preferred shares outstanding paying a dividend of \$0.30 per share. It also has 110,000 common shares outstanding. The preferred shares are cumulative with dividends in arrears for two years. If the company's board of directors decides to pay a total of \$35,000 in dividends this year, which of the following amounts will be paid to preferred shareholders?
- \$6,000
  - \$12,000
  - \$18,000
  - \$24,000
10. Which of the following statements about dividends is ***not*** true?
- Dividends represent a distribution of corporate earnings to shareholders.
  - Both stock dividends and cash dividends reduce retained earnings.
  - Cash dividends paid to shareholders reduce net earnings.
  - Dividends are declared at the discretion of the board of directors.
11. In the years 2005-2008, B Co.'s capital acquisitions ratio was 2.74 and from 2009-2012, it was 1.24. From 2009-2012, R Co.'s ratio was .30. Which of the following statements about B Co.'s capital acquisitions ratio is correct?
- B Co.'s capital acquisitions ratio is relatively low and indicates inability to finance property, plant and equipment with cash flow from operations.
  - It appears that R Co. is more aggressive about investing in additional property, plant and equipment than is B Co.
  - B Co.'s ratio has improved in the period 2009-2012.
  - It appears that B Co. is more aggressive about investing in additional property, plant and equipment than is R Co.
12. A general rule in assessing the average collection period is that it
- Should not greatly exceed the discount period.
  - Can be any length as long as the customer continues to purchase merchandise.
  - Should not greatly exceed the credit term period.
  - Should not exceed 30 days.
13. Under the cost principle:
- Only reasonable and necessary costs of acquiring an asset should be recorded as a cost of the asset.
  - Costs of preparing an asset for use should never be recorded as part of the cost of the asset.
  - All reasonable and necessary costs of acquiring an asset and preparing it for use should be recorded as a cost of the asset.
  - Only the actual purchase price of the asset is recorded as the cost of the asset.

14. Goodwill:

- a. Should be treated like most other intangible assets and amortized over a useful life of not more than 40 years.
- b. Is an accounting measurement of how well a company's employees behave towards the company's customers.
- c. Should be recorded as a negative value if a company is purchased for less than the carrying amount of its assets.
- d. Is recorded when the purchasers of a business pay more than the fair market value of the net assets purchased.

**Question 2: Long-Lived Assets**

**(19 marks, 31 minutes)**

On July 1, 2011, Sam Co. purchased property that includes land, buildings and equipment for \$5.5 million. The company paid half of this amount using cash and signed a two-year note for the remainder. Principal and interest at the rate of 5 percent are due at maturity. The fair market value for the land is \$1,750,000, the building is \$2,800,000 and the equipment is \$2,450,000.

The company also paid in cash \$180,000 for legal fees, \$220,000 for commissions, and \$100,000 for appraisal fees.

*Additional information related to the purchase of these assets is as follows:*

- The building is depreciated using the straight-line method over 10 years and its estimated residual value is \$150,000.
- The equipment's estimated useful life is four years and its estimated salvage value is \$300,000. It is depreciated using the double-declining balance method.
- On January 1, 2014, Sam Co. started the renovation on the building. Sam Co. paid \$120,000 for new decoration of offices in the building. In addition, \$400,000 was spent on construction, which increased the building's useful life by three years, and its residual value by \$100,000. The renovation on the building was completed by June 30, 2014.
- On January 1, 2015 Sam Co. sold the building for \$2,500,000 cash.
- Sam Co.'s fiscal year ends on June 30.

**Required:** *(Round all numbers to the nearest dollar)*

1. Identify the expenses (both type of expense and amount) that Sam Co. would report on its statement of earnings for the year ended June 30, 2012. Show all relevant calculations  
**(6 marks)**
2. Show how the purchase transaction on July 1, 2011 and related adjustments at June 30, 2012 would be presented on a partial statement of cash flows for the year ended June 30, 2012. Show all relevant calculations and all the effects on cash flows. The Company uses the indirect method of reporting cash from operating activities. **(6 marks).**
3. Prepare any necessary journal entries to record the disposal of the building on January 1, 2015.  
**(7 marks)**

**Question 3 Financial Statements:**

**(26 marks; 47 minutes)**

Leon's Furniture is one of Canada's largest retailers, selling a wide range of merchandise including furniture, major appliances and home electronics. Its consolidated statements of financial position and consolidated statements of income for 2013 appear on pages 6 and 7 of the examination paper.

**Part A**

Jason Lamothe, a wealthy investor, is interested in buying shares in Leon's and asked for your advice.

**Required:**

1. Calculate the following ratios for fiscal year ended December 31, 2013 (*Round all your calculations to two decimal points*): **(8 marks)**
  - a. Net profit margin
  - b. Times interest earned
  - c. Debt to equity
  - d. Inventory turnover
  - e. Return on assets
  - f. Quick ratio

*Leon's Finance costs included \$19,894 in interest expense.*
2. Which of the specific ratios you calculated in requirement 1 would be most relevant to your evaluation of Leon's as a potential investment, and why? **(2 marks)**
3. What additional information will also be relevant for your evaluation of Leon's as a potential investment? Be as specific as possible. **(2 marks)**

**Part B**

1. How much cash did Leon's collect from its customers during 2013, assuming its net credit sales equalled 80% of its total revenues? **(1.5 marks)**
2. Leon's income tax expense consists of two components: a current portion and a deferred portion. Leon's reported in a note that its current income tax expense totalled \$25,646 for 2013. Prepare the journal entry to record the payment of income taxes during 2013. **(2 marks)**
3. The Provisions reported under Current liabilities include a provision for product returns which Leon's describes as follows:

***PRODUCT RETURNS***

*The provision for product returns represents the Company's estimate of amounts the Company expects to incur regarding its product return policies. The estimate is based on sales recognized prior to the end of the reporting period, historical information, management judgment and actual experience subsequent to the end of the reporting period.*

Leon's increased its provision for product returns by \$478 at the end of 2013. Prepare the journal entry to record the adjustment to the Provision for Product Returns. **(1 mark)**

4. Leon's offers warranties on all products it sells to provide coverage that extends beyond the manufacturer's warranty period by up to five years. Warranties are sold to customers when they make their original purchase. Leon's extended warranty plan revenues are deferred at the time of sale and are recognized as revenue over the term of the warranty plan in a pattern matching the estimated future claims expense. The warranty contracts provide both repair and replacement services depending upon the nature of the warranty claim.

Repair and replacement of products under the warranty plan amounted to \$60,664 during 2013. Use the information provided in the financial statements to calculate the amount that the Company received for selling new warranties during 2013, and prepare the journal entry to record the sale of new warranties. **(3.5 marks)**

5. Leon's assets include Intangible assets and Goodwill. Identify the type of transactions that would cause:
  - a. the carrying amount of intangible assets to increase;
  - b. the carrying amount of goodwill to decrease. **(2 marks)**
6. Leon's paid cash dividends during 2013. Use the information available in the financial statements to calculate the amount of dividends paid. No journal entry is required. **(3 marks)**
7. Leon's has issued shares that provide the Company the option to redeem them at any time after the fifth anniversary date of the issue of these shares and must redeem them prior to the tenth anniversary of such issue. How would the Company report these shares on its financial statements? Explain. **(1 mark)**

## Consolidated Statements of Income

|   | Years Ended December 31 |                   |
|---|-------------------------|-------------------|
| (\$ in thousands)   | 2013                    | 2012              |
| <b>Revenue</b> [NOTE 17]                                    | \$ 1,694,643            | \$ 682,163        |
| Cost of sales [NOTE 6]                                      | 959,307                 | 398,704           |
| <b>Gross profit</b>   | <b>\$ 735,336</b>       | <b>\$ 283,459</b> |
| <b>Operating expenses</b> [NOTE 18]                         |                         |                   |
| General and administrative expenses                         | 267,741                 | 99,346            |
| Sales and marketing expenses                                | 213,562                 | 83,479            |
| Occupancy expenses  | 127,985                 | 34,289            |
| Other operating expenses                                    | 14,562                  | 6,523             |
| <b>Total operating expenses</b>                             | <b>\$ 623,850</b>       | <b>\$ 223,637</b> |
| <b>Operating profit</b>                                     | <b>111,486</b>          | <b>59,822</b>     |
| Finance costs [NOTE 19]                                     | (22,424)                | -                 |
| Finance income  | 2,494                   | 3,861             |
| Net income before income tax                                | 91,556                  | 63,683            |
| Income tax expense [NOTE 20]                                | 24,373                  | 16,901            |
| <b>Net income</b>   | <b>\$ 67,183</b>        | <b>\$ 46,782</b>  |
| <b>Weighted average number of common shares outstanding</b> |                         |                   |
| Basic   | 70,612,407              | 70,032,721        |
| Diluted   | 79,818,914              | 72,317,598        |
| <b>Earnings per share</b> [NOTE 21]                         |                         |                   |
| Basic   | \$ 0.95                 | \$ 0.67           |
| Diluted   | \$ 0.87                 | \$ 0.65           |
| <b>Dividends declared per share</b>                         |                         |                   |
| Common  | \$ 0.40                 | \$ 0.40           |
| Convertible, non-voting                                     | \$ 0.20                 | \$ 0.20           |

The accompanying notes are an integral part of these consolidated financial statements.

## Consolidated Statements of Financial Position

As at December 31

| (\$ in thousands)   | 2013                | 2012              |
|---|---------------------|-------------------|
| <b>ASSETS</b>   |                     |                   |
| <b>Current assets</b>   |                     |                   |
| Cash and cash equivalents [NOTES 5 AND 22]                                  | \$ 5,832            | \$ 74,949         |
| Restricted marketable securities [NOTE 25]                                  | 20,104              | 20,980            |
| Available-for-sale financial assets   | 17,336              | 125,755           |
| Trade receivables [NOTE 22]   | 104,275             | 27,961            |
| Income taxes receivable   | -                   | 3,644             |
| Inventories [NOTE 6]  | 277,656             | 86,057            |
| Deferred acquisition costs [NOTE 7]   | 1,659               | 1,271             |
| Deferred financing costs  | 903                 | 1,317             |
| <b>Total current assets</b>   | <b>\$ 427,765</b>   | <b>\$ 341,934</b> |
| Other assets  | 4,970               | 761               |
| Deferred acquisition costs [NOTE 7]   | 7,250               | 1,525             |
| Property, plant and equipment [NOTE 8]                                      | 433,586             | 218,146           |
| Investment properties [NOTE 9]  | 22,304              | 8,315             |
| Intangible assets [NOTE 10]   | 343,221             | 3,101             |
| Goodwill [NOTES 4 AND 10]   | 435,634             | 11,282            |
| Deferred income tax assets [NOTE 20]  | 7,444               | 3,114             |
| <b>Total assets</b>   | <b>\$ 1,682,174</b> | <b>\$ 588,178</b> |
| <b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>                                 |                     |                   |
| <b>Current liabilities</b>  |                     |                   |
| Trade and other payables [NOTE 11]  | \$ 202,618          | \$ 73,542         |
| Provisions [NOTE 12]  | 4,769               | -                 |
| Income taxes payable  | 12,135              | -                 |
| Customers' deposits   | 93,609              | 20,386            |
| Finance lease liabilities [NOTE 13]   | 4,302               | -                 |
| Dividends payable [NOTE 16]   | 7,063               | 7,055             |
| Deferred warranty plan revenue  | 54,028              | 14,743            |
| Debentures [NOTE 14]  | 15,503              | -                 |
| Loans and borrowings [NOTE 14]  | 50,000              | -                 |
| <b>Total current liabilities</b>  | <b>\$ 444,027</b>   | <b>\$ 115,726</b> |
| Loans and borrowings [NOTE 14]  | 325,255             | -                 |
| Convertible debentures [NOTE 14]  | 90,952              | -                 |
| Finance lease liabilities [NOTE 13]   | 137,887             | -                 |
| Deferred warranty plan revenue  | 85,494              | 17,251            |
| Redeemable share liability [NOTE 15]  | 859                 | 428               |
| Deferred rent liabilities and lease inducements                             | 2,377               | -                 |
| Deferred income tax liabilities [NOTE 20]                                   | 98,768              | 2,586             |
| <b>Total liabilities</b>  | <b>\$ 1,185,619</b> | <b>\$ 135,991</b> |
| <b>Shareholders' equity attributable to the shareholders of the Company</b> |                     |                   |
| Common shares [NOTE 16]   | \$ 27,352           | \$ 26,693         |
| Equity component of convertible debentures [NOTE 14]                        | 7,089               | -                 |
| Retained earnings   | 462,035             | 423,099           |
| Accumulated other comprehensive income                                      | 79                  | 2,395             |
| <b>Total shareholders' equity</b>   | <b>\$ 496,555</b>   | <b>\$ 452,187</b> |
| <b>Total liabilities and shareholders' equity</b>                           | <b>\$ 1,682,174</b> | <b>\$ 588,178</b> |

The accompanying notes are an integral part of these consolidated financial statements.

On behalf of the Board:

(signed)

Mark J. Leon, Director

(signed)

Peter Eby, Director

**Question 4**    *Long-Term Liabilities*

**(19 marks; 34 minutes)**

Donnie Ltd. issued 10-year, \$81 million face value debentures on October 1, 2013. The bonds mature on September 30, 2023. The annual stated (coupon) rate is 5%, and interest must be paid semi-annually on March 31 and September 30. The annual market rate was 4% for similar bonds at the time of issuance. Donnie's fiscal year ends on December 31. Donnie uses the effective interest method, in accordance with IFRS requirements.

**Required** (*Round all numbers to the nearest dollar*)

1. Calculate the proceeds from the bond issue and show in good form Donnie's journal entry to record the transaction on October 1, 2013. (Present Value tables are on page 11 of the examination paper)  
**(4 marks)**
2. Prepare in good form a partial Statement of Financial Position as at December 31, 2013 for Donnie Ltd., to show how the outstanding debentures are presented. **(4 marks)**
3. Prepare the journal entry to record the transaction on March 31, 2014. **(3.5 marks)**
4. Assume that Donnie redeems 70% of the bonds for cash "at 101" immediately after paying the interest on March 31, 2014. Answer the following questions based on this assumption. **(5.5 marks)**
  - a) How much interest will be paid in total for the entire ten-year period, i.e., from October 1, 2013 to September 30, 2023? Journal entries are not required.
  - b) How much interest expense will be incurred in total for the entire ten-year period, i.e., from October 1, 2013 to September 30, 2023? Journal entries are not required.
5. Companies are also allowed, in some cases, to use the straight-line method to amortize the discount or premium on bond payable (Hint: the amount of amortization is the same in each period where the amortization is recorded). As a potential investor, would you prefer one method over the other? Be specific in your answers, and no calculation is required.  
**(2 marks)**

**Question 5** *Statement of Cash Flows*

**(15 marks; 35 minutes)**

Comparative statements of financial position of Neilson Corp. and its statement of earnings for the year ending December 31, 2013 follow:

| Neilson Corp.<br>Statement of Financial Position (Comparative)<br>As at December 31 |                           |                           |                         |
|---|---------------------------|---------------------------|-------------------------|
|   | <u>2013</u>               | <u>2012</u>               | <i>Change</i>           |
| <b>Assets</b>   |                           |                           |                         |
| Cash  | \$ 46,000                 | \$ 56,000                 | \$(10,000)              |
| Cash equivalents  | 36,000                    | 45,000                    | (9,000)                 |
| Trade receivables, net  | 348,000                   | 271,000                   | 77,000                  |
| Merchandise inventory   | 437,500                   | 415,000                   | 22,500                  |
| Land  | 640,000                   | 500,000                   | 140,000                 |
| Building  | 1,310,000                 | 1,280,000                 | 30,000                  |
| Less: Accumulated depreciation  | <u>400,000</u>            | <u>360,000</u>            | <u>40,000</u>           |
| Building, net   | 910,000                   | 920,000                   | (10,000)                |
| Equipment   | 632,000                   | 640,000                   | (8,000)                 |
| Less: Accumulated depreciation  | <u>160,000</u>            | <u>135,000</u>            | <u>25,000</u>           |
| Equipment, net  | 472,000                   | 505,000                   | (33,000)                |
| Goodwill  | 103,500                   | 0                         | 103,500                 |
| Total Assets  | <u><u>\$2,993,000</u></u> | <u><u>\$2,712,000</u></u> | <u><u>\$281,000</u></u> |
| <b>Liabilities and Shareholders' Equity</b>   |                           |                           |                         |
| Trade payables  | \$ 160,000                | \$ 150,000                | \$ 10,000               |
| Income tax payable  | 26,000                    | 35,000                    | (9,000)                 |
| Accrued liabilities   | 57,000                    | 41,000                    | 16,000                  |
| Dividend payable  | 20,000                    | 50,000                    | (30,000)                |
| Long-term note payable  | 420,000                   | 460,000                   | (40,000)                |
| Bond payable  | 1,000,000                 | 1,000,000                 | 0                       |
| Less: Discount on bonds payable   | 1,000                     | 5,000                     | (4,000)                 |
| Bond payable, carrying amount   | 999,000                   | 995,000                   | 4,000                   |
| Preferred shares  | 304,000                   | 180,000                   | 124,000                 |
| Common shares   | 587,000                   | 506,000                   | 81,000                  |
| Retained earnings   | <u>420,000</u>            | <u>295,000</u>            | <u>125,000</u>          |
| Total Liabilities and Shareholders' Equity  | <u><u>\$2,993,000</u></u> | <u><u>\$2,712,000</u></u> | <u><u>\$281,000</u></u> |

| Neilson Corp.<br>Statement of Earnings<br>For the Year Ended December 31, 2013 |           |             |
|--|-----------|-------------|
| <i>Revenues</i>  |           |             |
| Sales revenue  |           | \$1,089,000 |
| <i>Expenses</i>  |           |             |
| Cost of sales  | \$314,000 |             |
| Commissions expense  | 108,000   |             |
| Operating expenses   | 166,000   |             |
| Wages expense  | 104,000   |             |
| Interest expense   | 95,000    |             |
| Loss on sale of equipment  | 11,000    |             |
| Income tax expense   | 96,000    |             |
| Total expenses   |           | 894,000     |
| <i>Net earnings</i>  |           | \$ 195,000  |

Additional information about Neilson Corp.'s business transactions during the year ended December 31, 2013 follows.

- A stock dividend on common shares for \$18,000 was declared and distributed to shareholders.
- There were no disposals of buildings or land during the year 2013.
- Equipment with an original cost of \$46,000 and carrying amount of \$14,000 was sold.
- All depreciation and amortization expenses are included in operating expenses.
- During the year, Neilson Corp. obtained land with a fair value of \$100,000 in exchange for its preferred shares.
- There is no long-term note payable issued during the period.

**Required**

1. Prepare, in a good form, the **operating** and **investing** sections only of Neilson Corp.'s statement of cash flows for the year ended December 31, 2013. Include any notes or supplementary information necessary. Use indirect method to prepare the operating section of cash flows statement. A complete statement of cash flows is not required **(13.5 marks)**
2. How much did the Company pay for interest and for income taxes paid during 2013? Show details of your calculations. **(1.5 marks)**

## Present Value Tables

**TABLE A.1**

**Present Value of \$1,  $p = 1/(1 + i)^n$**

| Periods | 2%     | 2.5%   | 2.75%  | 3%     | 3.75%  | 4%     | 4.25%  | 5%     |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1       | 0.9804 | 0.9756 | 0.9732 | 0.9709 | 0.9639 | 0.9615 | 0.9592 | 0.9524 |
| 2       | 0.9612 | 0.9518 | 0.9472 | 0.9426 | 0.9290 | 0.9246 | 0.9201 | 0.9070 |
| 3       | 0.9423 | 0.9286 | 0.9218 | 0.9151 | 0.8954 | 0.8890 | 0.8826 | 0.8638 |
| 4       | 0.9238 | 0.9060 | 0.8972 | 0.8885 | 0.8631 | 0.8548 | 0.8466 | 0.8227 |
| 5       | 0.9057 | 0.8839 | 0.8732 | 0.8626 | 0.8319 | 0.8219 | 0.8121 | 0.7835 |
| 6       | 0.8880 | 0.8623 | 0.8498 | 0.8375 | 0.8018 | 0.7903 | 0.7790 | 0.7462 |
| 7       | 0.8706 | 0.8413 | 0.8270 | 0.8131 | 0.7728 | 0.7599 | 0.7473 | 0.7107 |
| 8       | 0.8535 | 0.8207 | 0.8049 | 0.7894 | 0.7449 | 0.7307 | 0.7168 | 0.6768 |
| 9       | 0.8368 | 0.8007 | 0.7834 | 0.7664 | 0.7180 | 0.7026 | 0.6876 | 0.6446 |
| 10      | 0.8203 | 0.7812 | 0.7624 | 0.7441 | 0.6920 | 0.6756 | 0.6595 | 0.6139 |
| 20      | 0.6730 | 0.6103 | 0.5813 | 0.5534 | 0.4789 | 0.4564 | 0.4350 | 0.3769 |
| Periods | 6%     | 7%     | 8%     | 9%     | 10%    | 11%    | 12%    | 13%    |
| 1       | 0.9434 | 0.9346 | 0.9259 | 0.9174 | 0.9091 | 0.9009 | 0.8929 | 0.8850 |
| 2       | 0.8900 | 0.8734 | 0.8573 | 0.8417 | 0.8264 | 0.8116 | 0.7972 | 0.7831 |
| 3       | 0.8396 | 0.8163 | 0.7938 | 0.7722 | 0.7513 | 0.7312 | 0.7118 | 0.6931 |
| 4       | 0.7921 | 0.7629 | 0.7350 | 0.7084 | 0.6830 | 0.6587 | 0.6355 | 0.6133 |
| 5       | 0.7473 | 0.7130 | 0.6806 | 0.6499 | 0.6209 | 0.5935 | 0.5674 | 0.5428 |
| 6       | 0.7050 | 0.6663 | 0.6302 | 0.5963 | 0.5645 | 0.5346 | 0.5066 | 0.4803 |
| 7       | 0.6651 | 0.6227 | 0.5835 | 0.5470 | 0.5132 | 0.4817 | 0.4523 | 0.4251 |
| 8       | 0.6274 | 0.5820 | 0.5403 | 0.5019 | 0.4665 | 0.4339 | 0.4039 | 0.3762 |
| 9       | 0.5919 | 0.5439 | 0.5002 | 0.4604 | 0.4241 | 0.3909 | 0.3606 | 0.3329 |
| 10      | 0.5584 | 0.5083 | 0.4632 | 0.4224 | 0.3855 | 0.3522 | 0.3220 | 0.2946 |
| 20      | 0.3118 | 0.2584 | 0.2145 | 0.1784 | 0.1486 | 0.1240 | 0.1037 | 0.0868 |

**TABLE A.2**

**Present Value of Annuity of \$1,  $P = [1 - 1/(1 + i)^n]/i$**

| Periods | 2%      | 2.5%    | 2.75%   | 3%      | 3.75%   | 4%      | 4.25%   | 5%      |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1       | 0.9804  | 0.9756  | 0.9732  | 0.9709  | 0.9639  | 0.9615  | 0.9592  | 0.9524  |
| 2       | 1.9416  | 1.9274  | 1.9204  | 1.9135  | 1.8929  | 1.8861  | 1.8794  | 1.8594  |
| 3       | 2.8839  | 2.8560  | 2.8423  | 2.8286  | 2.7883  | 2.7751  | 2.7620  | 2.7232  |
| 4       | 3.8077  | 3.7620  | 3.7394  | 3.7171  | 3.6514  | 3.6299  | 3.6086  | 3.5460  |
| 5       | 4.7135  | 4.6458  | 4.6126  | 4.5797  | 4.4833  | 4.4518  | 4.4207  | 4.3295  |
| 6       | 5.6014  | 5.5081  | 5.4624  | 5.4172  | 5.2851  | 5.2421  | 5.1997  | 5.0757  |
| 7       | 6.4720  | 6.3494  | 6.2894  | 6.2303  | 6.0579  | 6.0021  | 5.9470  | 5.7864  |
| 8       | 7.3255  | 7.1701  | 7.0943  | 7.0197  | 6.8028  | 6.7327  | 6.6638  | 6.4632  |
| 9       | 8.1622  | 7.9709  | 7.8777  | 7.7861  | 7.5208  | 7.4353  | 7.3513  | 7.1078  |
| 10      | 8.9826  | 8.7521  | 8.6401  | 8.5302  | 8.2128  | 8.1109  | 8.0109  | 7.7217  |
| 20      | 16.3514 | 15.5892 | 15.2273 | 14.8775 | 13.8962 | 13.5903 | 13.2944 | 12.4622 |
| Periods | 6%      | 7%      | 8%      | 9%      | 10%     | 11%     | 12%     | 13%     |
| 1       | 0.9434  | 0.9346  | 0.9259  | 0.9174  | 0.9091  | 0.9009  | 0.8929  | 0.8850  |
| 2       | 1.8334  | 1.8080  | 1.7833  | 1.7591  | 1.7355  | 1.7125  | 1.6901  | 1.6681  |
| 3       | 2.6730  | 2.6243  | 2.5771  | 2.5313  | 2.4869  | 2.4437  | 2.4018  | 2.3612  |
| 4       | 3.4651  | 3.3872  | 3.3121  | 3.2397  | 3.1699  | 3.1024  | 3.0373  | 2.9745  |
| 5       | 4.2124  | 4.1002  | 3.9927  | 3.8897  | 3.7908  | 3.6959  | 3.6048  | 3.5172  |
| 6       | 4.9173  | 4.7665  | 4.6229  | 4.4859  | 4.3553  | 4.2305  | 4.1114  | 3.9975  |
| 7       | 5.5824  | 5.3893  | 5.2064  | 5.0330  | 4.8684  | 4.7122  | 4.5638  | 4.4226  |
| 8       | 6.2098  | 5.9713  | 5.7466  | 5.5348  | 5.3349  | 5.1461  | 4.9676  | 4.7988  |
| 9       | 6.8017  | 6.5152  | 6.2469  | 5.9952  | 5.7590  | 5.5370  | 5.3282  | 4.1317  |
| 10      | 7.3601  | 7.0236  | 6.7101  | 6.4177  | 6.1446  | 5.8892  | 5.6502  | 5.4262  |
| 20      | 11.4699 | 10.5940 | 9.8181  | 9.1285  | 8.5136  | 7.9633  | 7.4694  | 7.0248  |