

ANSWERS TO SELECTED END-OF-CHAPTER PROBLEMS

CHAPTER 2

- 2.2 \$165,100
 2.6 \$110,000
 2.10 \$200
 2.14 a. \$49,080
 b. \$22,900
 c. \$2,050
 d. \$3,730
 2.18 a. $\text{Tax}_{\text{Growth}} = \$16,130$
 $\text{Tax}_{\text{Income}} = \$2,788,000$
 b. \$3,400
 2.22 a. 2006 = \$1,845
 2007 = \$2,380
 b. \$25
 c. Fixed assets sold = \$70
 Cash flow from assets = \$2,105
 d. Debt retired = \$200
 Cash flow to creditors = \$134
 2.26 Cash flow from assets = -\$869.18
 Cash flow to creditors = -\$1,437.00
 Cash flow to stockholders = \$567.82

CHAPTER 3

- 3.2 Net income = \$1.92 million
 ROA = 10.67%
 ROE = 17.45%
 3.6 EPS = \$2.43
 DPS = \$0.76
 BVPS = \$19.52
 Market-to-book ratio = 2.97 times
 PE ratio = 23.88 times
 3.10 98.61 days
 3.18 \$195.27
 3.22 Firm A: 44.44%
 Firm B: 50.91%

- 3.26 a. 1.48 times; 1.46 times
 b. 0.86 times; 0.86 times
 c. 0.52 times; 0.53 times
 d. 1.16 times
 e. 8.25 times
 f. 20.61 times
 g. 0.52; 0.52
 h. 2.10; 2.07
 i. 2.10; 2.07
 j. 5.94 times
 k. 8.16 times
 l. 11.10%
 m. 12.91%
 n. 26.69%

CHAPTER 4

- 4.2 -\$2,035
 4.5 5.60%
 4.12 8.28%
 4.16 11.11%
 4.20 1.32 times
 4.22 Sustainable growth rate = 11.39%
 New borrowing = \$13,671
 Internal growth rate = 2.82%
 4.28 16.26%

CHAPTER 5

- 5.2 \$10,338.69
 \$23,802.15
 \$143,080.66
 \$413,943.81
 5.6 10.04%
 5.10 \$136,931,471.85
 5.14 \$0.10
 5.18 \$327,975.21
 \$105,599.24



CHAPTER 6

- 6.2** @ 5%: $PV_X = \$45,242.49$
 $PV_Y = \$38,965.29$
 @ 22%: $PV_X = \$25,334.87$
 $PV_Y = \$25,772.76$
- 6.6** \$366,546.89
- 6.10** \$250,000
- 6.14** First National EAR = 13.92%
 First United EAR = 13.85%
- 6.18** \$23,260.62
- 6.22** APR = 1,733.33%
 EAR = 313,916,515.69%
- 6.26** \$22,536.47
- 6.30** 8.63% semiannual
 4.22% quarterly
 1.39% monthly
- 6.38** \$701,276.07
- 6.42** \$392,025.82
- 6.46** Profit = \$6,492.27
 Breakeven = 15.54%
- 6.50** \$59,507.30
- 6.54** \$1,232.87
- 6.58** PV of lease payments = \$12,128.49
 PV of purchase = \$16,191.18
 Breakeven resale price = \$20,161.86
- 6.60** EAR = 13.64%
- 6.64** Refundable fee:
 APR = 7.27%
 EAR = 7.52%
 Nonrefundable fee:
 APR = 7.20%
 EAR = 7.40%
- 6.70** 14.52%
- 6.74** 8.47%

CHAPTER 7

- 7.4** 5.83%
- 7.8** 8.30%
- 7.12** 8.45%
- 7.26** a. 20,000 coupon bonds; 152,241 zeroes
 b. \$21,400,000; \$152,241,760
- 7.28** \$6,112.81

CHAPTER 8

- 8.2** 10.21%
- 8.6** \$3.40
- 8.10** \$47.55

- 8.14** \$2.81
- 8.18** Close = \$50.60
 Net income = \$89,947,090
- 8.22** a. \$42.40
 b. \$44.26

CHAPTER 9

- 9.4** 1.43 years; 2.38 years; 3.39 years
- 9.8** @ 11%: NPV = \$5,906.83
 @30%: NPV = -\$3,295.40
- 9.12** a. $IRR_A = 20.30\%$
 $IRR_B = 18.55\%$
 b. $NPV_A = \$6,588.52$
 $NPV_B = \$7,594.13$
 c. Crossover rate = 14.25%
- 9.16** a. $PI_I = 1.119$
 $PI_{II} = 1.264$
 b. $NPV_I = \$4,763.34$
 $NPV_{II} = \$3,169.80$
- 9.20** a. $C = I/N$
 b. $C > I/PVIFA_{R\%,N}$
 c. $C > 2.0^* I/PVIFA_{R\%,N}$

CHAPTER 10

- 10.2** \$354,000,000
- 10.8** \$1,645,532
- 10.12** $CF_0 = -\$4,500,000$
 $CF_1 = \$1,864,451$
 $CF_2 = \$2,024,768$
 $CF_3 = \$2,134,781$
 NPV = \$295,637.42
- 10.16** -\$99,136.87
- 10.22** \$0.02757

CHAPTER 11

- 11.2** Total costs = \$5,430,500
 Marginal cost = \$29.87
 Average cost = \$36.20
 Minimum revenue = \$297,800
- 11.8** $D = 582,500$
 $P = \$75.22$
 $VC = \$49.62$
- 11.12** OCF = \$39,091
 DOL = 4.837
- 11.18** DOL = 1.3842
 $DOL_A = 2.6522$
- 11.22** $\Delta NPV/\Delta P = \$140,210$
 $\Delta NPV/\Delta Q = \$1,100$

- 11.28 DOL = 1.1599
 $\Delta\text{OCF} = +2.58\%$

CHAPTER 12

- 12.2 $R_d = 2.44\%$
 $R_c = 15.48\%$
 12.6 2.72%; 3.11%
 12.16 $R_A = 11.83\%$
 $R_G = 9.62\%$
 12.20 12.51%; 12.15%; 11.42%

CHAPTER 13

- 13.2 13.98%
 13.6 12.30%
 13.10 a. 8.41%
 b. $\sigma_p^2 = .03029$
 $\sigma_p = 17.41\%$
 13.14 1.21
 13.18 0.0833
 13.24 $C = \$313,333$
 $R_F = \$211,667$
 13.26 $\beta_I = 4.27$
 $\sigma_I = 16.12\%$
 $\beta_{II} = 0.99$
 $\sigma_{II} = 26.39\%$

CHAPTER 14

- 14.4 a. \$9.25
 b. \$1.38
 14.8 a. $D_0 = \$900.93$
 b. $E_0 = \$382.06$
 14.12 \$5.11
 14.14 76.67%; 23.33%
 14.16 a. \$399,118.50
 b. Abandon if $Q < 4,676$
 14.22 a. \$4,811,802
 b. \$12,403,973

CHAPTER 15

- 15.2 14.70%
 15.4 $R_A = 13.27\%$; $R_G = 13.18\%$
 15.8 Book value = \$120,000,000
 Market value = \$106,100,000
 Aftertax cost = 5.17%
 15.12 a. $E/V = 0.3816$
 $D/V = 0.6184$
 b. $E/V = 0.8225$
 $D/V = 0.1775$

- 15.16 a. $D/V = 0.2055$
 $P/V = 0.0432$
 $E/V = 0.7513$
 b. 13.49%

- 15.20 Break-even cost = \$50,638,298

CHAPTER 16

- 16.2 a. \$60, anything greater than \$0
 b. 909,091, 5.72
 c. \$59.26, \$0.74
 16.6 1,270,186
 16.8 No change;
 declines by \$0.83;
 declines by \$1.67
 16.14 \$3,964.88

CHAPTER 17

- 17.2 a. \$1.63, \$4.06, \$5.69
 b. \$1.45, \$5.20, \$7.70
 17.6 a. \$6.67, \$8.18, \$5.22
 b. \$5,750
 c. \$5,750
 d. \$5,750
 17.10 \$2,750,000
 17.12 a. 16.78%
 b. 13.92%
 c. 21.63%, 17.77%, 13.92%
 17.16 \$236,928.57

CHAPTER 18

- 18.2 a. 2,000 new shares
 b. 5,000 new shares
 18.4 a. \$45.00
 b. \$65.22
 c. \$52.63
 d. 416,667; 287,000; 356,250, 142,857
 18.8 Shares outstanding = 402,500
 Capital surplus = \$2,647,500
 18.10 New borrowings = \$1,332
 Capital outlays = \$2,442
 18.14 $P_0 = \$35.33$
 $D = \$21.73$

CHAPTER 19

- 19.2 Cash = \$1,520
 Current assets = \$5,150
 19.4 a. I, I
 b. I, N
 c. D, D
 d. D, D

- e. *D,N*
f. *I,I*

- 19.6 Operating cycle = 87.67 days
Cash cycle = 39.31 days
- 19.8 a. \$219.00; \$234.00; \$258.00; \$234.60
b. \$204.00; \$219.00; \$234.00; \$258.00
c. \$209.00; \$224.00; \$242.00; \$250.20
- 19.10 a. \$193,333.33
b. \$222,857.14
c. \$252,321.43
\$280,780.57
\$308,250.00
- 19.14 a. 4.47%
b. 7.99%
c. 7.82%
- 19.18 10.47%

CHAPTER 20

- 20.2 a. \$68,000
-\$58,000
\$10,000
b. \$68,000
-\$29,000
\$39,000
- 20.6 a. \$21,600
b. 2.48 days
c. \$21,600
d. \$4.00
e. \$13,050
- 20.10 NPV = \$5,850,000
Net savings = \$292,500

APPENDIX 20A

- 20A.2 \$2,535.46
- 20A.4 a. Opportunity cost = \$13.50
Trading cost = \$388.89
b. \$2,415.23
- 20A.10 6.80%

CHAPTER 21

- 21.2 \$6,090,411
- 21.6 Sales = \$373,690
Accounts receivable turnover = 8.691 times
- 21.10 NPV = \$580,358.33
- 21.12 Carrying cost = \$8,325
Order cost = \$6,500
EOQ = 397.63
Orders = 58.85 per year
- 21.16 Net savings = \$1,260

APPENDIX 21A

- 21A.2 a. 3/10, net 30
b. \$264,000
d. NPV = -\$2,169,600
Break-even price = \$98.76
Break-even discount = 10.89%
- 21A.4 b. \$69.94
c. NPV = -\$189,046.97

CHAPTER 23

- 23.2 Loss = \$14,375
Profit = \$7,625
- 23.6 Great Britain: 2.13%
Japan: -0.03%
Switzerland: 0.60%
- 23.10 b. Krone 6.2720
- 23.12 b. 7.69%

CHAPTER 24

- 24.2 \$6,976.76
- 24.6 9.08%
- 24.10 Call delta = 0.70
Put delta = -0.30
- 24.14 \$1.35
- 24.16 \$4.98
- 24.20 Equity = \$5,173.62
Debt = \$16,826.38
Cost of debt = 17.28%
- 24.22 a. \$10,691,058.14
b. \$11,308,941.86
c. 9.76%
d. \$11,285,543.58
e. 9.62%
- 24.24 a. \$42,281.29
b. \$12,149.14
c. \$30,132.15; 13.78%
d. \$26,150.59; 16.61%
e. Bondholders lose \$3,981.56
Stockholders gain \$3,981.56

CHAPTER 25

- 25.8 EPS = \$4.39
PE = 17.94
- 25.10 .5701
- 25.14 a. £22.22
b. .5701

CHAPTER 26

- 26.2 -\$36,016.25
- 26.6 -\$1,445.36