

# Principles of Managerial Finance Solution

Lawrence J. Gitman

## APPENDIX C ANSWERS TO SELECTED END-OF-CHAPTER PROBLEMS GITMAN'S 10<sup>TH</sup>

- 1-1 a. Ms. Harper has unlimited liability: \$60,000  
c. Ms. Harper has limited liability
- 1-2 a. \$160,000  
b. \$150,000
- 1-5 a. \$19,700  
b. \$72,800  
c. 21.3%
- 1-8 e. Total tax liability: \$206,400
- 1-9 a. Earnings after tax: \$18,000
- 1-10 b. Asset X: \$100  
Asset Y: \$2,000
- 2-3 a. Net profit after tax: \$19,250
- 2-4 a. Earnings per share: \$1.162
- 2-7 Initial sales price: \$9.50
- 2-8 b. Earnings per share: \$2.36  
c. Cash dividend per share: \$1.50
- 2-11 a. Current ratio 2000: 1.88 2002: 1.79  
Quick ratio 2000: 1.22 2002: 1.24  
Net working capital 2002: \$9,900
- 2-13 a. 45 days
- 2-15
- |                       | <u>Creek</u> | <u>Industry</u> |
|-----------------------|--------------|-----------------|
| Debt ratio            | .73          | .51             |
| Times interest earned | 3.00         | 7.30            |
- 2-17 a.
- |                           | <u>Pelican</u> | <u>Timberland</u> |
|---------------------------|----------------|-------------------|
| (1) Debt ratio            | 10%            | 50%               |
| (2) Times interest earned | 62.5           | 12.5              |
- b.
- |                       | <u>Pelican</u> | <u>Timberland</u> |
|-----------------------|----------------|-------------------|
| (1) Operating margin  | 25%            | 25%               |
| (2) Net Profit margin | 14.8%          | 13.8%             |
| (3) ROA               | 36.9%          | 34.5%             |
| (4) ROE               | 41.0%          | 69.0%             |
- 2-20 a.
- |                            | <u>Actual<br/>2003</u> |
|----------------------------|------------------------|
| Current Ratio:             | 1.04                   |
| Average collection period: | 56 days                |
| Debt ratio:                | 61.3%                  |
| Net profit margin:         | 4.1%                   |
| Return on equity:          | 11.3%                  |
- 2-22 a. 2003 Johnson ROE = 21.21%  
Industry ROE = 14.46%
- 2-23 a.
- |                         | <u>Actual<br/>2003</u> |
|-------------------------|------------------------|
| Quick ratio:            | 2.20                   |
| Total asset turnover    | 2.00                   |
| Times interest earned   | 3.85                   |
| Operating profit margin | 16.0%                  |
| Price earnings ratio    | 9.8                    |
- 3-3 a. \$16,000  
c. \$305,240
- 3-6 b. \$13.367  
c. \$10,537
- 3-8
- |                     | <u>April</u>   | <u>May</u> |
|---------------------|----------------|------------|
|                     | <u>(\$000)</u> |            |
| Cash 1 month delay  | 168            | 183        |
| Cash 2 months delay | 120            | 134.4      |
| Total disbursements | 465.3          | 413.1      |
- 3-14 a. To retained earnings: \$146,600  
b. To retained earnings: \$157,400

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3-16 a. Total assets: \$1,383,000  
Total current liabilities: \$510,000  
External funds required: \$53,000

3-18 a. To retained earnings: \$32,500  
c. \$11,250

4-3 C: 3 years < n < 4 years

4-4 A: \$530.60

D: \$78.450

4-6 a. (1) \$15,456

4-8 a. 8% < i < 9%

4-11 B: \$6,020

D \$80,250

4-18 a. (1) A: \$36,217.50

(2) A: \$39,114.90

4-19 a. (1) C: \$2,821.70

(2) C: \$3,386.04

4-23 b. \$30,950.64

4-25 b. B: \$1,000,000

D: \$1,200,000

4-27 a. A: \$3,862.50

4-29 b. B: \$26,039

4-32 a. \$22,215

4-34 a. (1) Annual: \$8,810

Semiannual: \$8,955

Quarterly: \$9,030

4-35 b. B: 12.6%

D: 17.0%

4-40 B: \$2,439.32

4-43 a. \$60,000

b. \$3,764.82

4-45 A: \$4,656.58

B: \$10,619.47

C: \$7,955.87

4-49 a. A: 12% < i < 13%

Calculator solution 12.47%

C: 2% < i < 3%

Calculator solution 2.50%

4-51 a. B: 8% < i < 9%

Calculator solution 8.02%

D: 10% < i < 11%

Calculator solution 10.03%

4-56 A: 17 < n < 18

Calculator solution 17.79

D: 18 < n < 19

Calculator solution 18.68

5-1 a.. X: 12.50%

Y: 12.36%

5-2 A: 25%

5-4 a. A: 8%

B: 20%

5-5 a. R: 10%

S: 20%

b. R: 25%

S: 25.5%

5-9 a. (4) Project 257 CV: .368

Project 432 CV: .354

5-10 a. F: 4%

b. F: 13.38%

c. F: 3.345

5-12 b. Portfolio return: 15.5%

c. Standard deviation: 1.511%

5-15 a. 20.73%

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- c. 12.89%
- 5-18 a. 18% increase  
b. 9.6% decrease  
c. No change
- 5-22 A: 8.9%  
D: 15%
- 5-24 b. 10%
- 5-27 b. 12.4%  
c. 10.4%
- 6-1 3.5%
- 6-5 a. 20 year bond = 11.5%  
5 year bond = 10.5%
- 6-8 a. A: 9%  
B: 12%
- 6-10 b. \$175,000  
c. \$113,750
- 6-12 b. \$8,791.40
- 6-13 C: \$16,660.00  
D: \$9,717.00
- 6-15 a. \$1,156.88
- 6-19 a (1) \$1,120.23  
(2) \$1,000.00  
(3) \$896.01
- 6-22 a A: approximate: 12.36%  
calculator: 12.71%  
C: approximate: 10.38%  
calculator: 10.22%  
E: approximate: 8.77%  
calculator: 8.95%
- 6-25 A: \$1,152.35  
C: \$464.72  
E: \$76.11
- 7-1 b. 800,000 shares
- 7-3 A: \$15.00  
C: \$11.00  
D: \$25.50
- 7-6 a. \$20  
b. \$12
- 7-8 a. \$68.82  
b. \$60.95
- 7-9 A: \$24.00  
B: \$40.00  
E: \$18.75
- 7-10 a. \$37.75  
b. \$60.40
- 7-12 \$81.19
- 7-14 a. \$34.12  
b. \$20.21  
c. \$187.87
- 7-16 a. (1) \$5,021,250  
(2) \$5,411,250  
(3) \$4,049,331  
b. \$2,191,331  
c. \$10.96
- 7-18 a. Book value: \$36.00  
b. Liquidation value: \$30.20
- 7-19 A: \$18.60  
B: \$45.00  
E: \$76.50
- 8-1 a. Operating expenditure  
d. Operating expenditure

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- f. Capital expenditure
- 8-4 Year      Relevant cash flow
- |   |          |
|---|----------|
| 1 | \$4,000  |
| 2 | \$6,000  |
| 4 | \$10,000 |
- 8-7 A: \$275,500  
B: \$26,800
- 8-8 a. \$23,200  
b. @ \$100,000: \$30,720  
@ \$56,000: \$13,120
- 8-9 a. Total tax: \$49,600  
d. Total tax: (\$6,400)
- 8-12 Initial investment \$22,680
- 8-13 a. Initial investment: \$18,240  
c. Initial investment: \$23,100
- 8-16 c. Cash inflow, Year 3: \$584,000
- 8-18 b. Incremental cash flow, Year 3: \$1,960
- 8-21 Terminal cash flow: \$76,640
- 8-25 a. Initial investment, Asset B: \$51,488  
b. Incremental cash flow, Year 2, Hoist A: \$8,808  
c. Terminal cash flow, Hoist B: \$18,600
- 9-2 a. Machine 1: 4 years, 8 months  
Machine 2: 5 years, 3 months
- 9-4 a. \$3,246 Accept  
b. -\$5,131 Reject
- 9-5 a. \$2,675 Accept  
b. -\$805 Reject
- 9-7 a. \$1,497,650  
b. \$385,604  
c. \$1,632,400
- 9-10 a. Project A: 3.08 years Project C: 2.38 years  
b. Project C: NPV \$5,451
- 9-11 a. Project A: 17%  
Project D: 21%
- 9-14 a. NPV = \$1,222  
b. IRR = 12%  
c. Accept
- 9-16 a. Project A: payback 3 years 4 months  
b. A: \$120,000; B: \$105,000  
c. Project B: NPV \$51,137  
d. Project A: IRR 19.91%
- 9-21 a. Initial Investment: \$1,480,000  
b. 

Year	Cash Flow
1	\$656,000
2	761,600
3	647,200
4	585,600
5	585,600
6	44,000

  
c. 2.1 years  
d. NPV = \$959,289  
IRR = 35%
- 10-2 a. \$6,183.75
- 10-4 a. Range A: \$1,600  
Range B: \$200
- 10-5 b. Project A:  
Pessimistic \$73  
Most likely \$1,609  
Optimistic \$3,145
- 10-7 a. Project E: \$2,130; Project F: \$1,678

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- c. Project E: \$834; Project F: \$1,678
- 10-10 a. Project X: NPV \$14,960  
Project Y: NPV \$2,650
- 10-12 a. Project X: NPV \$2,681  
Project Y: NPV \$1,778
- b. Project X: ANPV \$920.04  
Project Y: ANPV \$1,079.54
- 10-14 a. Value of real options \$2,200  
NPV<sub>strategic</sub>: \$500
- 11-2 a. \$980
- d. 7.36% after tax
- 11-4 a. A: 4.12% after tax  
D: 3.83% after tax
- 11-7 a. 6%
- b. 12%
- 11-8 d. 16.54%
- 11-10 a. 11.28%
- b. 11.45%
- 11-13 a. 13.55%
- b. 12.985%
- 11-15 e. Breakpoint common stock: \$5,880,000
- f. 7.02%
- g. 7.07%
- 11-18 a. WACC 0 to \$600,000: 10.52%  
WACC \$600,001 to \$1,000,000: 10.96%
- 12-1 1,300
- 12-4 a. 21,000 CDs
- b. \$293,580
- d. \$10,500
- 12-6 a. 2,000 figurines
- b. -\$3,000
- c. \$2,000
- 12-8 a. 8,000 units
- b. @10,000 units: \$95,000
- 12-11 b. 2
- c. 1.25
- 12-15 a. 20,000 latches
- b. \$7,200
- e. 225.24
- 12-20 a. Structure A:  
EBIT \$30,000: EPS \$1.125  
Structure B:  
EBIT \$50,000: EPS 2.28

12-23 a. b. c.

	% Debt	# shs. @\$25	\$ Interest Expense	EPS
	0	1,600,000	0	\$3.00
	10	1,440,000	300,000	\$3.21
	40	960,000	1,760,000	\$3.90
	60	960,000	1,760,000	\$3.90

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- 13-4 a. \$4.75 per share
  - b. \$0.40 per share
  - 13-7 a. Year      \$ Dividend  
1994.            .10  
1998            .96  
2001            1.28  
2003            1.60
  - c. Year      \$ Dividend  
1994.            .50  
1998            .50

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- 2001 .66  
2003 1.30
- 13-9 a. Common stock: \$21,000  
Paid in capital: \$294,000  
Retained earnings: \$85,000
- 13-11 a. \$2.00  
d. \$20.00 per share
- 13-13 a. 1,200,000 shares @ \$1.50 par  
d. 3,600,000 shares @ \$0.50 par
- 13-16 a. 19,047 shares  
b. \$2.10
- 14-1 a. OC = 150 days  
b. CCC = 120 days  
c. \$10,000,000
- 14-2 b. CCC = 70 days  
c. \$27,222
- 14-4 a. Average season requirement: \$4,000,000
- 14-6 a. 200 units  
b. 122.2 units  
c. 33.33 units
- 14-9 Loss from implementation: \$4,721
- 14-11 Loss from implementation: \$11,895
- 14-13 a. 7 days  
b. \$21,450
- 15-2 a. 36.73%  
b. 18.18%  
e. 7.27%
- 15-6 \$1,300,000
- 15-7 \$82,500
- 15-9 14.29%
- 15-10 a. Effective rate: 12.94%  
b. Effective rate: 11.73%
- 15-13 a. Effective rate: 2.25%  
b. Effective annual rate: 13.69%
- 15-17 Amount remitted  
A \$196,000  
C: \$107,800  
F: \$176,400  
G: \$ 88,200
- 16-2 

<u>Loan</u>	<u>Year</u>	<u>Interest amount</u>
A	1	\$1,400
A	4	\$402
D	2	\$5,822
D	4	\$3,290
- 16-4 b. Lease: PV of outflows: \$42,934  
Purchase: PV of outflows: \$43,896
- 16-10 A: \$1,056.25
- 16-13 a. \$832.75  
c. @ \$9 price: \$932.75  
@ \$13 price: \$1,040.00
- 16-17 a. 160 shares; 400 warrants  
b. \$1,600 profit; 20% return  
c. \$10,000 profit; 125% return
- 16-19 A: \$300  
B: -\$50  
C: \$500
- 16-20 b. \$400 profit  
c. \$66 to break even
- 16-21 a. @ \$46: -\$100  
@ \$40: \$120

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- 17-1 a. Tax liability: \$1,680,000  
b. Total tax savings: \$320,000
- 17-4 a. NPV: \$19,320  
c. NPV: \$15,616
- 17-6 a. EPS Marla's: \$1.029  
EPS Victory: \$1.852  
d. (a) 10.8  
(b) 12.0  
(c) 13.2
- 17-8 A: (1) 0.60 (2) 1.20  
B: (1) 1.25 (2) 1.25  
D: (1) 0.25 (2) 1.25
- 17-10 a. 1.125  
c. P/E: 16.89  
d. EPS: \$2.529
- 17-12 a. Composition  
b. Extension  
c. Combination
- 18-1 a. \$152,425  
b. \$100,600
- 18-3
- |             | <u>U.S. \$</u> | <u>DM</u> | <u>Sf</u> |
|-------------|----------------|-----------|-----------|
| Euro market | 5.0%           | 8.0%      |           |
| Domestic    |                | 7.6%      | 6.7%      |