

2.96 Management for Engineers

Fall 2004

ANSWERS TO QUIZ I

Q1-2

Each question will be equally weighted for evaluation.

(a) Accounts Receivable:

$$\begin{aligned} \text{Total assets} &= \text{Total liabilities} + \text{Total stockholders' equity} \\ \$300 + 500 + 400 + (a)\text{Land} + 500 &= 300 + 400 + 600 + 500 \end{aligned}$$

$$\underline{\text{Land} = \$100}$$

(b) Expenses:

$$\begin{aligned} \text{Net income} &= \text{Sales} + \text{Expenses} \\ \$600 &= (b)\text{Sales} - 300 \end{aligned}$$

$$\underline{\text{Sales} = \$900}$$

(c) Dividends:

$$\begin{aligned} \text{Ending retained earnings} &= \text{Beginning retained earnings} + \text{Net income} - \text{Dividends} \\ \$500 &= \$0 + 600 - \text{Dividends} \end{aligned}$$

$$\underline{\text{Dividends} = \$100}$$

(d) & (e)

$$\begin{aligned} \text{Total assets} &= \text{Total liabilities} + \text{Total stockholders' equity} \\ \$500 + 400 + (d)\text{Inventory} + 300 + 600 &= 700 + 500 + 400 + (e)\text{Retained earnings} \end{aligned}$$

$$\text{Ending retained earnings} = \text{Beginning retained earnings} + \text{Net income} - \text{Dividends}$$

$$\text{Retained earnings} = \$500 + 500 - 600$$

$$\underline{\text{Retained earnings} = \$400}$$

$$\underline{\text{Inventory} = \$200}$$

(f) Sales:

$$\text{Net income} = \text{Sales} + \text{Expenses}$$

$$\$500 = \$1300 + \text{Expenses}$$

$$\underline{\text{Expenses} = -\$800 \rightarrow (800)}$$

(g) Accounts payable:

$$\text{Total assets} = \text{Total liabilities} + \text{Total stockholders' equity}$$

$$\$400 + (\text{g})\text{Accounts receivable} + 300 + 400 + 800 = 400 + 800 + 900 + 300$$

$$\underline{\text{Accounts receivable} = \$500}$$

(h) Expenses:

$$\text{Net income} = \text{Sales} + \text{Expenses}$$

$$-\$100 = \text{Sales} - 700$$

$$\underline{\text{Expenses} = \$600}$$

(f) Dividends:

$$\text{Ending retained earnings} = \text{Beginning retained earnings} + \text{Net income} - \text{Dividends}$$

$$\$300 = 400 - 100 - \text{Dividends}$$

$$\underline{\text{Dividends} = \$0}$$

Q1-3

Each item in Cash Flow statement will be equally weighted for evaluation.

TEST CORPORATION
CONSOLIDATED STATEMENT OF CASH FLOWS

<u>Cash Flow from Operating Activities:</u>	
Net Income	1,700
Non Cash Adjustments	
Increase in Depreciation	10
Decrease in Accounts Receivable	50
Increase in Raw Materials Inventory	(50)
Decrease in Merchandise Inventory	60
Increase in Other Current Assets	(200)
Increase in Accounts Payable	300
Decrease in Other Current Liabilities	(80)
Net Cash Increase from Operating Activities	1,790
<u>Cash Flow from Investing Activities:</u>	
Purchase of Property, Plant, and Equipment	(140)
Purchase of Other Fixed Assets	(40)
Net Cash Increase from Investing Activities	(180)
<u>Cash Flow from Financing Activities:</u>	
Payment of Long Term Bank Loans	(200)
Payment of Other Liabilities	(100)
Decrease in Current Portion of Long Term Debt	(50)
Issuance of Stocks (Paid in Capital)	20
Dividends Paid	(1,500)
Net Cash Increase from Financing Activities	(1,830)
Total Increase in Cash during the year 2002	(220)
Beginning Cash Balance	380
Ending Cash Balance	160

Q1-4

$$(a) \quad \begin{array}{r} \text{Cash} \\ \hline \$Y \quad | \end{array} \qquad \begin{array}{r} \text{Sales Revenue} \\ \hline \quad | \quad \$X \end{array}$$

$$\begin{array}{r} \text{Accounts Receivable} \\ \hline \$X-Y \quad | \end{array}$$

Sales Revenue would increase by \$X (put on right side or credit side)
 Cash would increase by \$Y (put on left side or debit side)
 Accounts Receivable would increase by \$X-Y (put on left side or debit side)

$$(b) \quad \begin{array}{r} \text{Cash} \\ \hline \quad | \quad \$Z \end{array}$$

$$\begin{array}{r} \text{Equipment} \\ \hline \$Z \quad | \end{array}$$

Building and Equipment increase by \$Z (put on left side or debit side)
 Cash would decrease by \$Z (put on right side or credit side)

Q1-5

$$1) \text{ Return on Assets} = (\text{Income} / \text{Assets}) \times 100$$

$$= (1,700 / ((3,270 + 3180)/2)) \times 100$$

$$= 52.7 \%$$

$$2) \text{ Debt to Equity Ratio} = \text{Total Liabilities} / \text{Shareholders' Equity}$$

$$= 1,520 / 1,750$$

$$= 0.87$$

$$3) \text{ Gross Margin} = (\text{Gross Profit} / \text{Sales Revenue}) \times 100$$

$$= (12,200 / 38,500) \times 100$$

$$= 31.7 \%$$