

Quiz #1  
May 16, 2012  
11:35-12:05

DURATION: 30 MINUTES

No. of Students: **90**

Course: **BUSI 2504a - Essentials of Business Finance**

Instructor: **Dr. Mitch Murphy**

Student Name: SOLUTIONS

Student Number: \_\_\_\_\_

Grade: \_\_\_\_\_/10 + \_\_\_\_\_/10 = \_\_\_\_\_/20

AUTHORIZED MEMORANDA

**BAlI Plus calculator**

Students **MUST** count the number of pages in this examination question paper before beginning to write, and report any discrepancy to a proctor. This question paper has **5** pages (including this cover).

This examination question paper **MAY NOT** be taken from the examination room.

This examination question paper **MAY NOT** be released to the library.

**FORMULAS**

$$\left( \begin{array}{c} \text{cash flow} \\ \text{from assets} \end{array} \right) = \underbrace{\left( \begin{array}{c} \text{cash flow to} \\ \text{creditors} \end{array} \right)}_{\substack{\text{interest paid} \\ + \text{principal paid} \\ - \text{new borrowing}}} + \underbrace{\left( \begin{array}{c} \text{cash flow to} \\ \text{stockholders} \end{array} \right)}_{\substack{\text{dividends paid} \\ + \text{stock repurchased} \\ - \text{new stock issued}}}$$

$$\left( \begin{array}{c} \text{cash flow} \\ \text{from assets} \end{array} \right) = \underbrace{\left( \begin{array}{c} \text{operating} \\ \text{cash flow} \end{array} \right)}_{\substack{\text{EBIT} \\ + \text{depreciation} \\ - \text{taxes}}} - \underbrace{\left( \begin{array}{c} \text{net capital} \\ \text{spending} \end{array} \right)}_{\substack{\text{ending net fixed assets} \\ - \text{beginning net fixed assets} \\ + \text{depreciation}}} - \underbrace{\left( \begin{array}{c} \text{additions} \\ \text{to NWC} \end{array} \right)}_{\substack{\text{ending NWC} \\ - \text{beginning NWC}}}$$

$$\underbrace{\frac{\text{net income}}{\text{equity}}}_{ROE} = \underbrace{\frac{\text{net income}}{\text{assets}}}_{ROA} \times \underbrace{\frac{\text{assets}}{\text{equity}}}_{EM} = \underbrace{\frac{\text{net income}}{\text{sales}}}_{PM} \times \underbrace{\frac{\text{sales}}{\text{assets}}}_{TAT} \times \underbrace{\frac{\text{assets}}{\text{equity}}}_{EM}$$

**PART A: MULTIPLE CHOICE (5 QUESTIONS - 10 MARKS)**

[2] Q1. The agency problem is best defined as a conflict of interest between a firm's:

- (a) various employees.
- (b) various managers.
- (c) managers and the firm's employees.
- (d) .
- (e) stockholders and the firm's debtors.

[2] Q2. It is easiest to raise capital for a project under which form of business organization?

- (a) Sole proprietorship.
- (b) .
- (c) General partnership.
- (d) Limited partnership.
- (e) The form of business organization does NOT affect the ability to raise capital.

- [2] Q3. Toby's Pizza has total sales of \$987,611 and costs of goods sold of \$724,268. Depreciation is \$39,740 and the tax rate is 34%. The firm does not have any interest expense. What is the operating cash flow?

$$\begin{aligned}
 EBIT &= Sales - COGS - DEP = 987,611 - 724,268 - 39,740 = 223,603 \\
 TI &= EBIT \text{ (since no interest expense)} \Rightarrow Taxes = TI \cdot T = (223,603)(.34) = 76,025.02 \\
 \Rightarrow OCF &= EBIT + DEP - Taxes = 223,603 + 39,740 - 76,025.02 = 187,317.98
 \end{aligned}$$

- (a) \$147,577.98.      (b) .      (c) \$191,417.06.      (d) \$213,008.14.

- [2] Q4. A firm has sales of \$500, total assets of \$300, and a debt/equity ratio of 1. If its return on equity is 15%, what is its net income?

$$\begin{aligned}
 ROE &= ROA \cdot EM = \frac{NI}{A} \left(1 + \frac{D}{E}\right) \\
 \Rightarrow NI &= \frac{ROE \cdot A}{\left(1 + \frac{D}{E}\right)} = \frac{(.15)(300)}{2} = 22.50
 \end{aligned}$$

- (a) \$7.50.      (b) \$15.00.      (c) .      (d) \$32.50.

- [2] Q5. Common-size statements:

- (a) Depict the cash flows of a firm.  
 (b) .  
 (c) Reflect the ratio analysis of a firm.  
 (d) Show the sources and uses of cash.  
 (e) Reflect the market value of a firm.

**PART B: WRITTEN PROBLEM (1 QUESTION - 10 MARKS)****Show your work, including the general form of any equations used.**

[10] Q4. Use the following financial statements to answer (a)-(e):

	2009	2010		2010
Cash	310	405	Net sales	9,610
Accounts receivable	2,640	3,055	Less: Cost of goods sold	6,310
Inventory	3,275	3,850	Less: Depreciation	1,370
Net fixed assets	10,960	10,670	EBIT	1,930
Total assets	17,185	17,980	Less: Interest expense	630
Current liabilities	2,820	2,570	Taxable Income	1,300
Long-term debt	7,875	8,100	Less: Taxes	455
Common stock	5,000	5,250	Net income	845
Retained earnings	1,490	2,060		
Total liabilities and equity	17,185	17,980		

[2] (a) What is net capital spending for 2010?

$$\begin{aligned}
 NCS_{2010} &= NFA_{2010} - NFA_{2009} + Dep_{2010} \\
 &= 10,670 - 10,960 + 1,370 \\
 &= \mathbf{1,080}
 \end{aligned}$$

[2] (b) What is operating cash flow for 2010?

$$\begin{aligned}OCF &= EBIT + Dep - Taxes \\ &= 1,930 + 1,370 - 455 \\ &= \mathbf{2,845}\end{aligned}$$

[2] (c) What is the change in net working capital for 2010?

$$\begin{aligned}\Delta NWC_{2010} &= (CA_{2010} - CL_{2010}) - (CA_{2009} - CL_{2009}) \\ &= (7,310 - 2,570) - (6,225 - 2,820) \\ &= \mathbf{1,335}\end{aligned}$$

[2] (d) What is cash flow from assets for 2010?

$$\begin{aligned}CFFA_{2010} &= OCF - NCS - \Delta NWC \\ &= 2,845 - 1,080 - 1,335 \\ &= \mathbf{430}\end{aligned}$$

[2] (e) What is cash flow to stockholders for 2010? (*Hint: dividends are paid from retained earnings*)

$$\begin{aligned}CFS &= Dividends - \Delta CS \text{ (or equivalent variations of formula)} \\ &= (NI_{2010} - (RE_{2010} - RE_{2009})) - (CS_{2010} - CS_{2009}) \\ &= (845 - (2,060 - 1,490)) - (5,250 - 5,000) \\ &= \mathbf{25}\end{aligned}$$

(NOTE: only 1/2 mark off if dividends wrong)