XLRI Xavier School of Management — For the greater good	**BM – FM2 Course**

Quiz I Examination, Date:			
Weightage	**20%**	**Duration**	**90 minutes**

Name ______________________________ **Roll No**. ________________________

INSTRUCTIONS

1. Closed book exam.
2. Students cannot use laptop. Students cannot bring their mobiles inside exam room.

You are not allowed to borrow papers, calculators, etc. you are required to work out the complete solution in the answer sheets provided. Please answer each question in a new page.

Anyone who resorts to unfair practices, as judged by the examiner, the minimum penalty will be zero in this segment of evaluation, while the maximum penalty could be expulsion from the institute. There will be no further warnings.

1. Ratios and Financial Planning at East Coast Yachts

Dan Ervin was recently hired by East Coast Yachts to assist the company with its short-term financial planning and also to evaluate the company's financial performance. Dan graduated from college five years ago with a finance degree, and he has been employed in the treasury department of a *Fortune* 500 company since then.

East Coast Yachts was founded 10 years ago by Larisa Warren. The company's operations are located near Hilton Head Island, South Carolina, and the company is structured as an LLC. The company has manufactured custom midsize, high-performance yachts for clients over this period, and its products have received high reviews for safety and reliability. The company's yachts have also recently received the highest award for customer satisfaction. The yachts are primarily purchased by wealthy individuals for pleasure use. Occasionally, a yacht is manufactured for purchase by a company for business purposes.

The custom yacht industry is fragmented, with a number of manufacturers. As with any industry, there are market leaders, but the diverse nature of the industry ensures that no manufacturer dominates the market. The competition in the market, as well as the product cost, ensures that attention to detail is a necessity. For instance, East Coast Yachts will spend 80 to 100 hours on hand-buffing the stainless steel stem-iron, which is the metal cap on the yacht's bow that conceivably could collide with a dock or another boat.

To, get Dan started with his analyses, Larisa has provided the following financial statements. Dan has gathered the industry ratios for the yacht manufacturing industry.

EAST COAST YACHTS

2006 Income Statement

Sales		$128,700,000
Cost of goods sold		90,700,000
Other expenses		15,380,000
Depreciation		4,200,000
Earnings before interest and taxes (EBIT)		$18,420,000
Interest		2,315,000
Taxable income		$16,105,000
Taxes (40%)		6,442,000
Net income		$9,663,000
Dividends	$5,797,800	
Addition to retained earnings	3,865,200	

EAST COAST YACHTS

Balance Sheet as of December 31, 2006

Assets		Liabilities & Equity	
Current assets		Current liabilities	
Cash	$2,340,000	Accounts payable	$4,970,000
Accounts receivable	4,210,000	Notes payable	10,060,000
Inventory	4,720,000		
Total	$11,270,000	Total	$15,030,000
Fixed assets		Long-term debt	$25,950,000
Net plant and equipment	$72,280,000		
		Shareholders' equity	
		Common stock	$4,000,000
		Retained earnings	38,570,000
		Total equity	$42,570,000
Total assets	$83,550,000	Total liabilities and equity	$83,550,000

Yacht Industry Ratios

	Lower Quartile	Median	Upper Quartile
Current ratio	0.50	1.43	1.89
Quick ratio	0.21	0.38	0.62
Total asset turnover	0.68	0.85	1.38
Inventory turnover	4.89	6.15	10.89
Receivables turnover	6.27	9.82	14.11
Debt ratio	0.44	0.52	0.61
Debt-equity ratio	0.79	1.08	1.56
Equity multiplier	1.79	2.08	2.56
Interest coverage	5.18	8.06	9.83
Profit margin	4.05%	6.98%	9.87%
Return on assets	6.05%	10.53%	13.21%
Return on equity	9.93%	16.54%	26.15%

a) Calculate the sustainable growth rate of East Coast Yachts. Calculate external funds needed (EFN) and prepare pro forma income statements and balance sheets assuming growth at precisely this rate. *(Max 4 marks)*

b) As a practical matter, East Coast Yachts is unlikely to be willing to raise external equity capital, in part because the owners don't want to dilute their existing ownership and control positions. However, East Coast Yachts is planning for a growth rate of 20 percent next year. What are your conclusions and recommendations about the feasibility of East Coast's expansion plans?
(Max 4 marks)

2. Bullock Gold Mining

Seth Bullock, the owner of Bullock Gold Mining, is evaluating a new gold mine in South Dakota. Dan Dority, the company's geologist, has just finished his analysis of the mine site. He has estimated that the mine would be productive for eight years, after which the gold would be completely mined. Dan has taken an estimate of the gold deposits to Alma Garrett, the company's financial officer. Alma has been asked by Seth to perform an analysis of the new mine and present her recommendation on whether the company should open the new mine.

Alma has used the estimates provided by Dan to determine the revenues that could be expected from the mine. She has also projected the expense of opening the mine and the annual operating expenses. If the company opens the mine, it will cost $500 million today, and it will have a cash outflow of $80 million nine years from today in cost associated with closing the mine and reclaiming the area surrounding it. The expected cash flows each year /from the mine are shown in the following table. Bullock Mining has a 12 percent required return on all of its gold mines.

Year	Cash Flow
0	-$500,000,000
1	60,000,000
2	90,000,000
3	170,000,000
4	230,000,000
5	205,000,000
6	140,000,000
7	110,000,000
8	70,000,000
9	-80,000,000

c) Calculate the payback period and net present value of the proposed mine. *(Max 5 marks)*

3. Stock Valuation at Ragan Thermal Systems

Ragan Thermal Systems, Inc., was founded nine years ago by brother and sister Carrington and Genevieve Ragan. The company manufactures and installs commercial heating, ventilation, and cooling (HVAC) units. Ragan has experienced rapid growth because of a proprietary technology that increases the energy efficiency of its systems. The company is equally owned by Carrington and Genevieve. The original agreement between the siblings gave each 50,000 shares of stock. In the event either wished to sell the stock, the shares first had to be offered to the other at a discounted price.

Although neither sibling wants to sell any shares at this time, they have decided they should value their holdings in the company for financial planning purposes. To accomplish this, they have gathered the following information about their main competitors.

Ragan Thermal Systems, Inc., Competitors					
	EPS	**DPS**	**Stock Price**	**ROE**	**R**
Arctic Cooling, Inc.	$.82	$.16	$15.19	11%	10%
National Heating &Cooling	1.32	.52	12.49	14	13
Expert HVAC Corp.	-.47	.54	48.60	14	12
Industry average	$0.56	$0.41	$25.43	13%	11.67%

Expert HVAC Corp.'s negative earnings per share (EPS) were the result of an accounting write-off last year. Without the write-off, EPS for the company would have been $2.34.

Last year, Ragan had an EPS of $4.32 and paid a dividend to Carrington and Genevieve of $54,000 each. The company also had a return on equity of 25 percent. The siblings believe a required return for the company of 20 percent is appropriate.

a) Assuming the company continues its current growth rate, what is the value per share of the company's stock? *(Max 1 marks)*

To verify their calculations, Carrington and Genevieve have hired Josh Schlessman as a consultant. Josh was previously an equity analyst, and he has covered the HVAC industry. Josh has examined the company's financial statements as well as those of its competitors. Although Ragan currently has a technological advantage, Josh's research indicates that Ragan's competitors are investigating other methods to improve efficiency. Given this, Josh believes that Ragan's technological advantage will last for only the next five years. After that period, the company's growth will likely slow to the industry average. Additionally, Josh believes that the required return the company uses is too high. He believes the industry average required return is more appropriate. Under Josh's assumptions, what is the estimated stock price? *(Max 2 marks)*

b) Assume the company's growth rate declines to the industry average after five years. What percentage of the stock's value is attributable to growth opportunities? *(Max 2 marks)*

c) Assume the company's growth rate slows to the industry average in five years. What future return on equity does this imply? *(Max 2 marks)*