UNIVERSITY COLLEGE LONDON

University of London

EXAMINATION FOR INTERNAL STUDENTS

For The Following Qualification:-

B.Sc.

ES3040: Financial Management

COURSE CODE	:	**ENVS3040**
UNIT VALUE	:	**0.50**
DATE	:	**02-MAY-06**
TIME	:	**14.30**
TIME ALLOWED	:	**3 Hours**

06-C0480-3-60

TURN OVER

ENVS 3040 Financial Management

Answer Four Questions. All Questions Carry Equal Marks.

Question 1

A one-year zero coupon bond that pays £100 next year costs 96.15, while a five-year zero coupon bond that pays £100 in five years costs 74.72.

(1) Calculate the yield to maturity for the one-year zero coupon and lay down the formula for calculating the yield to maturity for the five-year zero coupon bond.

(5 marks)

(2) If the yield for maturity for the five-year zero coupon bond is 6% in (1) above, calculate the 4 year forward rate one year from now (i.e. the rate you can lock in now that you would receive if you invested in one year for four years)?

(5 marks)

(3) Explain what are duration and volatility in the pricing of bonds? Calculate durations and volatilities of the two bonds? What will the duration and volatility of a four year zero coupon bond be next year if its yield to maturity equals the forward rate?

(8 marks)

(4) What's the practical use of bond volatilities? Identify its weakness, if any.

(7 marks)

Question 2

YellowBrickRoad Corporation's treasurer forecasts a deficit for the next quarter. There is a 35 percent chance this deficit will be £10 million, a 40 percent chance the deficit will be £16 million, and a 25 percent chance the company will have no deficit at all. The company can either take out a 90-day unsecured loan for £16 million at 1.2 percent per month, or establish a line of credit, costing 1.2 percent per month on the amount borrowed plus a commitment fee of £250,000. Assume the cash requirement accumulates linearly during the quarter until it reaches either £10 million or £16 million and that the company cannot reinvest excess cash.

(1) Explain the expected cost of taking the unsecured loan?

(10 marks)

(2) Assume that if the company's debt grows, it pays interest on the average amount of debt it owes during the period. Calculate the expected cost of establishing the line of credit. (You can make assumptions to simplify your calculation).

(10 marks)

(3) Explain source of financing gives the lower expected cost?

(5 marks)

Question 3

Premier Construction plc has 1 million shares outstanding. It is expecting to have earnings of £1 million next year (year 1) and that investors require a rate of return of 15% on the stock. Assume there are no taxes and return on equity is 10%.

(1) (A) Suppose the firm pays out all the earnings as dividends in each period. What will be the stock price?

(5 marks)

(B) Suppose the firm plows back 50% of its earnings in each period. What will be the stock price?

(5 marks)

(C) Explain why there is a difference in share prices between (A) and (B)? Explain.

(5 marks)

The manager of the firm wants to invest in a project that will cost £10 million now and then pays back a stream of earnings starting with £1.2 million in year 1 and growing at 5% forever. Assume the manager knows the cash flow of the project with certainty and the project does not affect the rate of return required by investors. Also assume that any new shareholders neither gain nor lose money from purchasing the issued shares, because they buy the shares at the post-issue equilibrium price.

(2) The manager decides now to issue new shares to finance the project. If everyone knows the true cash flow of the project, what will be the share price and how many shares will need to be issued?

(10 marks)

Question 4

The Macrohard Comp. stock has a standard deviation of 40%, and the market portfolio has a standard deviation of 30%. The correlation coefficient of the returns of Macrohard and the market portfolio is 0.8. The risk-free interest rate is 5%, and the return on the market portfolio is 10%.

(1) Explain the rate of return of the Macrohard stock.

(8 marks)

(2) If the dividend yield is 9%, calculate the expected rate of growth in dividends.

(8 marks)

(3) The Marcrohard's key competitor in the market is Orange. Security analysts predict its dividends are expected to grow at 20% per year for the next two years and at the same rate as Macrohard's thereafter. Calculate the current value of the Orange stock.

(9 marks)

Question 5

(1) Define the Yield curve and describe its properties, particularly over the business cycle.

(8 marks)

(2) You are considering issuing long-term bonds for a major corporation. You could attach a deferred call to the bonds, or you could make the bonds extendible at the option of the investor. Explain what each of these options means, and state how they would affect the price of the bonds. Explain what would happen to the price if the bonds had a deferred call feature AND were extendible at the option of the investor? Explain.

(10 marks)

(3) Define put-call parity and explain why does it hold. Discuss whether the parity formula can be applied to a call and put with different exercise prices.

(7 marks)

Question 6

Company A's financial information for last year is the following:

Assets	**(£m)**
Current Assets	
Cash & securities	50
Receivables	357
Inventory	461
Total current assets	868
Fixed Assets	
Property, plant and equipment	1023
Less accumulated depreciation	240
Net fixed assets	783
Total assets	1651
Liabilities and shareholders' equity	
Current liabilities	
Debt due within 1 year	88
Payables	260
Total current liabilities	384
Longer-term debt	576
Shareholders' equity	727
Total liabilities & shareholders' equity	1651
Other financial information	
Market value of equity	1323.19
Average number of shares (million)	23
Share price (£ per share)	57.53

6. (Continue)

Income Statement	**(£m)**
Revenues	4500
Costs	4250
Depreciation	43
DBIT	207
Interest	63
Tax	57
Net Income	87
Dividends	50
Retained Earnings	37

Calculate and **interpret** the meanings of the following financial ratios and use examples to illustrate where these five ratios can be used to improve financial decision making: (Assume no change in company's total assets or book value of equity over time).

(1) Debt Ratio

(5 marks)

(2) Return on Assets (ROA)

(5 marks)

(3) Return on Equity (ROE)

(5 marks)

(4) Dividend Yield

(5 marks)

(5) Market-to-book ratio

(5 marks)

Question 7

Explain when it makes sense to use project finance rather than a direct debt issue by the parent company.

(8 marks)

(1) Use an example to illustrate the differences between corporate finance and project finance?

(10 marks)

(2) Use an example to illustrate how financial risks of a project can be mitigated by using financial instruments.

(7 marks)

Question 8

(1) Illustrate the typical financing structure of a PFI project.

(6 marks)

(2) Why are sometimes restrictive covenants included in a project financing contract?

(6 marks)

(3) Can you explain the functions of sinking funds and call provisions in project financing.

(6 marks)

(4) Explain whether the following statements are true or false.

(A) When a company becomes bankrupt, it is usually in the interests of the shareholders to seek a liquidation rather than a re-organization.

(3 marks)

(B) A re-organization plan must be presented for approval by each class of creditor.

(4 marks)

END OF PAPER