

UNIVERSITY OF BRADFORD

CORPORATE FINANCE (MSc)

MAN4257M

Friday 10th January 2014

16:00 – 17:30 hours

This is a **CLOSED BOOK** examination

Answer any **TWO** questions
All questions carry equal weighting

Non-programmable calculators without a long-term data memory are permitted

Answer any TWO questions
All questions carry equal weighting

1. Alloa Pumps Ltd is considering an investment in the facilities required to manufacture a new oil pump that has been designed and developed by the company. The company has already spent £90,000 on developing the pump and expects to spend another £50,000 on testing the product, a tax deductible expense. The equipment required to manufacture the pump will cost £800,000 and this can be written off for tax purposes on a straight-line basis over a five year period. The five year period corresponds to the period over which the company is planning to market the pump. The equipment should have a resale value of £150,000 at the end of the five years. As the company's space is being fully utilised it will be necessary to rent a factory for the five year period at a cost of £30,000 per annum. The direct costs of materials, components and labour will be £110 per unit. The fixed costs of production, excluding the cost of renting premises, are expected to be £40,000 per annum. The price per unit is expected to be set at £400 per unit and annual sales of 1250 units are anticipated. The company anticipates holding stocks of ready to sell pumps equivalent to ten per cent of the number of units that are expected to be sold annually and £20,000 worth of new materials and components. The required rate of return is 14 per cent and the tax rate is 30 per cent.
- a) Determine whether or not this is a positive NPV investment, setting out the key assumptions underlying your analysis.
(30 marks)
- b) Explain briefly what is meant by sensitivity analysis and undertake an illustrative sensitivity analysis for the price of the product.
(5 marks)
- c) Distinguish between scenario analysis; sensitivity analysis and break even analysis and assess the benefits of each one of these methods in capital budgeting.
(10 marks)
- d) Explain your treatment of working capital in the analysis and interpret its implications for the NPV.
(5 marks)
- (Total 50 marks)*

2. a) The earnings and dividend per share of Mungo plc have increased steadily over the last few years and the company is expected to maintain its current rate of growth on a permanent basis. The company's shares are trading at 900p and the company is expected to pay a dividend of 67.5p next year. Given the nature of the company's expected growth it can be assumed that its share price can be explained by the constant rate of growth model.
- i. Determine the company's growth rate if the required rate of return is 12.5 per cent.
(5 marks)
- ii. The company's expected earnings per share for next year is 112.5p. Determine its payout ratio, the expected rate of return on new investments, and comment on the contribution made by growth to the company's share price.
(5 marks)
- b) Hacken plc is expected to pay a dividend per share of 150p next year. The company has been growing rapidly and dividends are expected to grow at 12 per cent for the subsequent two years (years 2 and 3). The rate of return on new investments and the growth rate are expected to fall after the third year. The dividend in year four is expected to be 5 per cent higher than the dividend in year three. If the required rate of return is 15 per cent and dividends are expected to grow at 5 per cent per annum from year 4 onwards determine a value for the company's shares.
(10 marks)
- c) Explain the principles of the Earnings model and what is meant by the present value of growth opportunities.
(10 marks)
- d) Discuss why an investment in a coupon paying AAA treasury bond still carries risk.
(10 marks)
- e) Distinguish between the following methods of company valuation: Net Asset Value; PE multiples; Free Cash flows discounting. How do these three methods compare to each other in terms of advantages/disadvantages.
(10 marks)
- (Total 50 marks)

3. a) *“As long as the expected rate of return on capital employed is higher than the interest rate on debt the use of gearing will increase the expected rate of return on equity, but this will not necessarily create any value for shareholders.”* Explain and discuss.

(10 marks)

- b) Explain the traditional perspective theory capital structure and the theory developed by Modigliani and Miller (without considering taxes).

(20 marks)

- c) Given perfectly competitive markets there appears to be no advantage in employing debt capital. Discuss some of the reasons for the use of debt when markets are not perfectly competitive.

(20 marks)

(Total 50 marks)

4. a) *“In perfect capital markets, holding fixed the investment and borrowing policies of a firm, the firm’s choice of dividend policy is irrelevant. Nevertheless, real world imperfections may dictate otherwise ”* Comment on the previous statement with reference to dividend payout theories.

(20 marks)

- b) A group of senior managers of the confectionary division of Alban Foods plc has been negotiating terms for a buyout of the division. The company and the buyout group have agreed a value of £20 million for the division. The buyout group is considering alternative funding possibilities. The group is in a position to invest £5 million in the equity of the buyout company from their own resources, but need to borrow the remaining £15 million. It has been established that they could borrow this sum from a bank – the loan would be at an interest rate of 12 per cent and would be repaid in six equal annual instalments. The company has also indicated that it would be prepared to accept a down payment of £5 million, with the remaining £15 million being paid off in the form of four annual instalments of £4,732,100. This is below the minimum annual net cash flow of £6 million anticipated from the business.

- i. Determine the annual instalment for the repayment of the bank loan.

(10 marks)

- ii. Determine the approximate value of the interest rate implied by the instalment plan offered by the company

(10 marks)

- c) Explain what beta is and how its determinants affect value.

(10 marks)

(Total 50 marks)

Formulae Sheet

$$FVA = C \frac{(1+r)^t - 1}{r}$$

$$PVA = C \left[\frac{1}{r} - \frac{1}{r(1+r)^t} \right]$$

$$y = y_0 + \frac{y_1 - y_0}{x_1 - x_0} (x - x_0)$$

$$E(R_i) = R_F + (E(R_M) - R_F) \beta_i$$

$$\beta_i = \frac{COV(R_j, R_m)}{VAR(R_m)} = \rho_{jm} \frac{SD(R_j)}{SD(R_m)}$$

Capital Market Line

$$E(R_p) = R_F + \frac{(E(R_M) - R_F)}{SD(R_M)} SD(R_p)$$

Security Market Line (CAPM)

$$E(R_i) = R_F + (E(R_M) - R_F) \beta_i$$