

**THE UNIVERSITY OF BOLTON**

**BUSINESS & CREATIVE TECHNOLOGIES**

**ACCOUNTANCY PATHWAY BY DISTANCE**  
**LEARNING**

**SEMESTER ONE EXAMINATION 2009/2010**

**MALAYSIA – I-SYSTEMS (INTAKE 4)**

**FINANCIAL MANAGEMENT**

**MODULE NO: ACC3015**

Date: Saturday 12<sup>th</sup> December 2009    Time: 3 Hours Morning

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**INSTRUCTIONS TO CANDIDATES:**    There are **FOUR** questions.

Answer **ALL** questions

All questions carry equal marks.

Present value and Annuity tables are included at the back of this examination paper.

Candidates are advised that the examiners attach importance to legibility of writing and clarity of expression.

This examination carries 70% of the marks for this module.

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University of Bolton  
 Business & Creative Technologies  
 Accountancy Pathway By Distance Learning  
 Malaysia – I-Systems (Intake 4)  
 Semester 1 Examination 2009/2010  
 Financial Management  
 Module No. ACC3015

**ALL FOUR questions are compulsory and MUST be attempted**

**Question 1. (25 Marks)**

**(a)** Alpha Co is considering a bid for Delta Co. Both companies are stock market listed and are in the same business sector. Financial information on Delta Co, which is shortly to pay its annual dividend, is as follows:

|                                     |           |
|-------------------------------------|-----------|
| Number of ordinary shares           | 5 million |
| Ordinary share price (ex div basis) | \$3.30    |
| Earnings per share                  | 40.0c     |
| Proposed payout ratio               | 60%       |
| Dividend per share one year ago     | 23.3c     |
| Dividend per share two years ago    | 22.0c     |
| Equity beta                         | 1.4       |

|                                      |       |
|--------------------------------------|-------|
| Other relevant financial information |       |
| Average sector price/earnings ratio  | 10    |
| Risk-free rate of return             | 4.6%  |
| Return on the market                 | 10.6% |

**Required:**

Calculate the value of Delta Co using the following methods:

- (i) price/earnings ratio method;
- (ii) dividend growth model;

and discuss the significance, to Alpha Co, of the values you have calculated, in comparison to the current market value of Delta Co. **(11 marks)**

**(b)** Alpha Co has in issue 9% bonds that are redeemable at their par value of \$100 in five years' time. Alternatively, each bond may be converted on that date into 20 ordinary shares of the company. The current ordinary share price of Alpha Co is \$4.45 and this is expected to grow at a rate of 6.5% per year for the foreseeable future. Alpha Co has a cost of debt of 7% per year.

**Question 1 continued over...  
 Please turn the page**

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 Accountancy Pathway By Distance Learning  
 Malaysia – I-Systems (Intake 4)  
 Semester 1 Examination 2009/2010  
 Financial Management  
 Module No. ACC3015

**Question 1 cont'd...**

**Required:**

Calculate the following current values for each \$100 convertible bond:

(i) market value;

(ii) floor value;

(iii) conversion premium.

**(6 marks)**

(c) Distinguish between weak form, semi-strong form and strong form stock market efficiency, and discuss the significance to a listed company if the stock market on which its shares are traded is shown to be semi-strong form efficient.

**(8 marks)**

**Total 25 marks**

**Question 2. (25 Marks)**

Omega Co needs to increase production capacity to meet increasing demand for an existing product, 'Zippo', which is used in food processing. A new machine, with a useful life of four years and a maximum output of 600,000 kg of Zippo per year, could be bought for \$800,000, payable immediately. The scrap value of the machine after four years would be \$30,000. Forecast demand and production of Zippo over the next four years is as follows:

| Year        | 1           | 2           | 3           | 4           |
|-------------|-------------|-------------|-------------|-------------|
| Demand (kg) | 1.4 million | 1.5 million | 1.6 million | 1.7 million |

Existing production capacity for Zippo is limited to one million kilograms per year and the new machine would only be used for demand additional to this.

The current selling price of Zippo is \$8.00 per kilogram and the variable cost of materials is \$5.00 per kilogram. Other variable costs of production are \$1.90 per kilogram. Fixed costs of production associated with the new machine would be \$240,000 in the first year of production, increasing by \$20,000 per year in each subsequent year of operation.

Omega Co pays tax one year in arrears at an annual rate of 30% and can claim capital allowances (tax-allowable depreciation) on a 25% reducing balance basis. A balancing allowance is claimed in the final year of operation.

Omega Co uses its after-tax weighted average cost of capital when appraising investment projects. It has a cost of equity of 11% and a before-tax cost of debt of 8.6%. The long-term finance of the company, on a market-value basis, consists of 80% equity and 20% debt.

**Question 2 continued over...  
 Please turn the page**

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 Business & Creative Technologies  
 Accountancy Pathway By Distance Learning  
 Malaysia – I-Systems (Intake 4)  
 Semester 1 Examination 2009/2010  
 Financial Management  
 Module No. ACC3015

**Question 2 cont'd**

**Required:**

(a) Calculate the net present value of buying the new machine and advise on the acceptability of the proposed purchase (work to the nearest \$1,000). **(13 marks)**

(b) Calculate the internal rate of return of buying the new machine and advise on the acceptability of the proposed purchase (work to the nearest \$1,000). **(4 marks)**

(c) Explain the difference between risk and uncertainty in the context of investment appraisal, and describe how sensitivity analysis and probability analysis can be used to incorporate risk into the investment appraisal process. **(8 marks)**

**Total 25 marks**

**Question 3. (25 Marks)**

The following financial information relates to Vector Co:

**Income statement information for the last year**

|                                | <b>\$m</b> |
|--------------------------------|------------|
| Profit before interest and tax | 12         |
| Interest                       | 3          |
|                                | 9          |
| Profit before tax              | 9          |
| Income tax expense             | 3          |
|                                | 6          |
| Profit for the period          | 6          |
| Dividends                      | 2          |
|                                | 4          |
| Retained profit for the period | 4          |

**Balance sheet information as at the end of the last year**

|  | <b>\$m</b> | <b>\$m</b> |
|--|------------|------------|
| Ordinary shares, par value 50c                 | 5          |            |
| Retained earnings                              | 15         |            |
|  | 20         |            |
| Total equity                                   |            | 20         |
| 8% loan notes, redeemable in three years' time |            | 30         |
|  |            | 50         |
| Total equity and non-current liabilities       |            | 50         |

**Average data on companies similar to Echo Co:**

Interest coverage ratio 8 times  
 Long-term debt/equity (book value basis) 80%

**Question 3 continued over...  
 Please turn the page**

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Business & Creative Technologies  
Accountancy Pathway By Distance Learning  
Malaysia – I-Systems (Intake 4)  
Semester 1 Examination 2009/2010  
Financial Management  
Module No. ACC3015

**Question 3 cont'd...**

The board of Vector Co is considering several proposals that have been made by its finance director. Each proposal is independent of any other proposal.

**Proposal A**

The current dividend per share should be increased by 20% in order to make the company more attractive to equity investors.

**Proposal B**

A bond issue should be made in order to raise \$15 million of new debt capital. Although there are no investment opportunities currently available, the cash raised would be invested on a short-term basis until a suitable investment opportunity arose. The loan notes would pay interest at a rate of 10% per year and be redeemable in eight years' time at par.

**Proposal C**

A 1 for 4 rights issue should be made at a 20% discount to the current share price of \$2.30 per share in order to reduce gearing and the financial risk of the company.

**Required:**

- (a) Analyse and discuss Proposal A. **(6marks)**
- (b) Evaluate and discuss Proposal B. **(7 marks)**
- (c) Calculate the theoretical ex rights price per share and the amount of finance that would be raised under Proposal C. Evaluate and discuss the proposal to use these funds to reduce gearing and financial risk. **(7 marks)**
- (d) Discuss the attractions of operating leasing as a source of finance. **(5marks)**
- Total 25 marks**

**Please turn the page**

University of Bolton  
Business & Creative Technologies  
Accountancy Pathway By Distance Learning  
Malaysia – I-Systems (Intake 4)  
Semester 1 Examination 2009/2010  
Financial Management  
Module No. ACC3015

**Question 4. (25 Marks)**

Lactose plc is an importer/exporter of dairy machinery. It is based in the UK but trades with other countries throughout Europe. It has a small subsidiary based in Germany. The company is about to invoice a customer in Germany for €750,000, (euros) receivable in 3 months' time. Lactose plc's treasurer is considering 2 methods of hedging the exchange risk. These are:

Method 1: A money market hedge

Method 2: A 3-month forward exchange contract with the company's bank to sell €750,000.

The spot rate of exchange is €1.1934 to £1. The 3-month forward rate of exchange is €1.1940 to £1. The annual interest for borrowing in Germany is 3% and for investing in the UK is 5%.

**Required:**

- (a) Advise the treasurer on which of the 2 methods is the most financially advantageous for Lactose plc. Include relevant calculations in your advice. **(10 marks)**
- (b) Discuss the differences between transaction risk, translation risk and economic risk. **(5 marks)**
- (c) Evaluate other methods available to hedge exchange rate risk. **(10 marks)**

**Total 25 marks**

**Please turn the page**

University of Bolton  
 Business & Creative Technologies  
 Accountancy Pathway By Distance Learning  
 Malaysia – I-Systems (Intake 4)  
 Semester 1 Examination 2009/2010  
 Financial Management  
 Module No. ACC3015

**Present Value Table**

Present value of 1 i.e.  $(1 + r)^{-n}$

Where  $r$  = discount rate  
 $n$  = number of periods until payment

| Periods<br>(n) | Discount rate (r) |       |       |       |       |       |       |       |       |       |
|----------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                | 1%                | 2%    | 3%    | 4%    | 5%    | 6%    | 7%    | 8%    | 9%    | 10%   |
| 1              | 0.990             | 0.980 | 0.971 | 0.962 | 0.952 | 0.943 | 0.935 | 0.926 | 0.917 | 0.909 |
| 2              | 0.980             | 0.961 | 0.943 | 0.925 | 0.907 | 0.890 | 0.873 | 0.857 | 0.842 | 0.826 |
| 3              | 0.971             | 0.942 | 0.915 | 0.889 | 0.864 | 0.840 | 0.816 | 0.794 | 0.772 | 0.751 |
| 4              | 0.961             | 0.924 | 0.888 | 0.855 | 0.823 | 0.792 | 0.763 | 0.735 | 0.708 | 0.683 |
| 5              | 0.951             | 0.906 | 0.863 | 0.822 | 0.784 | 0.747 | 0.713 | 0.681 | 0.650 | 0.621 |
| 6              | 0.942             | 0.888 | 0.837 | 0.790 | 0.746 | 0.705 | 0.666 | 0.630 | 0.596 | 0.564 |
| 7              | 0.933             | 0.871 | 0.813 | 0.760 | 0.711 | 0.665 | 0.623 | 0.583 | 0.547 | 0.513 |
| 8              | 0.923             | 0.853 | 0.789 | 0.731 | 0.677 | 0.627 | 0.582 | 0.540 | 0.502 | 0.467 |
| 9              | 0.914             | 0.837 | 0.766 | 0.703 | 0.645 | 0.592 | 0.544 | 0.500 | 0.460 | 0.424 |
| 10             | 0.905             | 0.820 | 0.744 | 0.676 | 0.614 | 0.558 | 0.508 | 0.463 | 0.422 | 0.386 |
| 11             | 0.896             | 0.804 | 0.722 | 0.650 | 0.585 | 0.527 | 0.475 | 0.429 | 0.388 | 0.350 |
| 12             | 0.887             | 0.788 | 0.701 | 0.625 | 0.557 | 0.497 | 0.444 | 0.397 | 0.356 | 0.319 |
| 13             | 0.879             | 0.773 | 0.681 | 0.601 | 0.530 | 0.469 | 0.415 | 0.368 | 0.326 | 0.290 |
| 14             | 0.870             | 0.758 | 0.661 | 0.577 | 0.505 | 0.442 | 0.388 | 0.340 | 0.299 | 0.263 |
| 15             | 0.861             | 0.743 | 0.642 | 0.555 | 0.481 | 0.417 | 0.362 | 0.315 | 0.275 | 0.239 |

| (n) | 11%   | 12%   | 13%   | 14%   | 15%   | 16%   | 17%   | 18%   | 19%   | 20%   |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1   | 0.901 | 0.893 | 0.885 | 0.877 | 0.870 | 0.862 | 0.855 | 0.847 | 0.840 | 0.833 |
| 2   | 0.812 | 0.797 | 0.783 | 0.769 | 0.756 | 0.743 | 0.731 | 0.718 | 0.706 | 0.694 |
| 3   | 0.731 | 0.712 | 0.693 | 0.675 | 0.658 | 0.641 | 0.624 | 0.609 | 0.593 | 0.579 |
| 4   | 0.659 | 0.636 | 0.613 | 0.592 | 0.572 | 0.552 | 0.534 | 0.516 | 0.499 | 0.482 |
| 5   | 0.594 | 0.567 | 0.543 | 0.519 | 0.497 | 0.476 | 0.456 | 0.437 | 0.419 | 0.402 |
| 6   | 0.535 | 0.507 | 0.480 | 0.456 | 0.432 | 0.410 | 0.390 | 0.370 | 0.352 | 0.335 |
| 7   | 0.482 | 0.452 | 0.425 | 0.400 | 0.376 | 0.354 | 0.333 | 0.314 | 0.296 | 0.279 |
| 8   | 0.434 | 0.404 | 0.376 | 0.351 | 0.327 | 0.305 | 0.285 | 0.266 | 0.249 | 0.233 |
| 9   | 0.391 | 0.361 | 0.333 | 0.308 | 0.284 | 0.263 | 0.243 | 0.225 | 0.209 | 0.194 |
| 10  | 0.352 | 0.322 | 0.295 | 0.270 | 0.247 | 0.227 | 0.208 | 0.191 | 0.176 | 0.162 |
| 11  | 0.317 | 0.287 | 0.261 | 0.237 | 0.215 | 0.195 | 0.178 | 0.162 | 0.148 | 0.135 |
| 12  | 0.286 | 0.257 | 0.231 | 0.208 | 0.187 | 0.168 | 0.152 | 0.137 | 0.124 | 0.112 |
| 13  | 0.258 | 0.229 | 0.204 | 0.182 | 0.163 | 0.145 | 0.130 | 0.116 | 0.104 | 0.093 |
| 14  | 0.232 | 0.205 | 0.181 | 0.160 | 0.141 | 0.125 | 0.111 | 0.099 | 0.088 | 0.078 |
| 15  | 0.209 | 0.183 | 0.160 | 0.140 | 0.123 | 0.108 | 0.095 | 0.084 | 0.074 | 0.065 |

**Please turn the page**

University of Bolton  
 Business & Creative Technologies  
 Accountancy Pathway By Distance Learning  
 Malaysia – I-Systems (Intake 4)  
 Semester 1 Examination 2009/2010  
 Financial Management  
 Module No. ACC3015

### Annuity Table

Present value of an annuity of 1 i.e.  $\frac{1 - (1 + r)^{-n}}{r}$

Where  $r$  = discount rate  
 $n$  = number of periods

| Periods<br>(n) | 1%     | 2%     | 3%     | 4%     | 5%     | 6%    | 7%    | 8%    | 9%    | 10%   |
|----------------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|
| 1              | 0.990  | 0.980  | 0.971  | 0.962  | 0.952  | 0.943 | 0.935 | 0.926 | 0.917 | 0.909 |
| 2              | 1.970  | 1.942  | 1.913  | 1.886  | 1.859  | 1.833 | 1.808 | 1.783 | 1.759 | 1.736 |
| 3              | 2.941  | 2.884  | 2.829  | 2.775  | 2.723  | 2.673 | 2.624 | 2.577 | 2.531 | 2.487 |
| 4              | 3.902  | 3.808  | 3.717  | 3.630  | 3.546  | 3.460 | 3.387 | 3.312 | 3.240 | 3.170 |
| 5              | 4.853  | 4.713  | 4.580  | 4.452  | 4.329  | 4.212 | 4.100 | 3.993 | 3.890 | 3.791 |
| 6              | 5.795  | 5.601  | 5.417  | 5.242  | 5.076  | 4.917 | 4.767 | 4.623 | 4.486 | 4.355 |
| 7              | 6.728  | 6.472  | 6.230  | 6.002  | 5.786  | 5.582 | 5.389 | 5.206 | 5.033 | 4.868 |
| 8              | 7.652  | 7.325  | 7.020  | 6.733  | 6.463  | 6.210 | 5.971 | 5.747 | 5.535 | 5.335 |
| 9              | 8.566  | 8.162  | 7.786  | 7.435  | 7.108  | 6.802 | 6.515 | 6.247 | 5.995 | 5.759 |
| 10             | 9.471  | 8.983  | 8.530  | 8.111  | 7.722  | 7.360 | 7.024 | 6.710 | 6.418 | 6.145 |
| 11             | 10.370 | 9.787  | 9.253  | 8.760  | 8.306  | 7.887 | 7.499 | 7.139 | 6.805 | 6.495 |
| 12             | 11.260 | 10.580 | 9.954  | 9.385  | 8.863  | 8.384 | 7.943 | 7.536 | 7.161 | 6.814 |
| 13             | 12.130 | 11.350 | 10.630 | 9.986  | 9.394  | 8.853 | 8.358 | 7.904 | 7.487 | 7.103 |
| 14             | 13.000 | 12.110 | 11.300 | 10.560 | 9.899  | 9.295 | 8.745 | 8.244 | 7.786 | 7.367 |
| 15             | 13.870 | 12.850 | 11.940 | 11.120 | 10.381 | 9.712 | 9.108 | 8.559 | 8.061 | 7.606 |

| (n) | 11%   | 12%   | 13%   | 14%   | 15%   | 16%   | 17%   | 18%   | 19%   | 20%   |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1   | 0.901 | 0.893 | 0.885 | 0.877 | 0.870 | 0.862 | 0.855 | 0.847 | 0.840 | 0.833 |
| 2   | 1.713 | 1.690 | 1.668 | 1.647 | 1.626 | 1.605 | 1.585 | 1.566 | 1.547 | 1.528 |
| 3   | 2.444 | 2.402 | 2.361 | 2.322 | 2.283 | 2.246 | 2.210 | 2.174 | 2.140 | 2.106 |
| 4   | 3.102 | 3.037 | 2.974 | 2.914 | 2.855 | 2.798 | 2.743 | 2.690 | 2.639 | 2.589 |
| 5   | 3.696 | 3.605 | 3.517 | 3.433 | 3.352 | 3.274 | 3.199 | 3.127 | 3.058 | 2.991 |
| 6   | 4.231 | 4.111 | 3.998 | 3.889 | 3.784 | 3.685 | 3.589 | 3.498 | 3.410 | 3.326 |
| 7   | 4.712 | 4.564 | 4.423 | 4.288 | 4.160 | 4.039 | 3.922 | 3.812 | 3.706 | 3.605 |
| 8   | 5.146 | 4.968 | 4.799 | 4.639 | 4.487 | 4.344 | 4.207 | 4.078 | 3.954 | 3.837 |
| 9   | 5.537 | 5.328 | 5.132 | 4.946 | 4.772 | 4.607 | 4.451 | 4.303 | 4.163 | 4.031 |
| 10  | 5.889 | 5.650 | 5.426 | 5.216 | 5.019 | 4.833 | 4.659 | 4.494 | 4.339 | 4.192 |
| 11  | 6.207 | 5.938 | 5.687 | 5.453 | 5.234 | 5.029 | 4.836 | 4.656 | 4.486 | 4.327 |
| 12  | 6.492 | 6.194 | 5.918 | 5.660 | 5.421 | 5.197 | 4.988 | 4.793 | 4.611 | 4.439 |
| 13  | 6.750 | 6.424 | 6.122 | 5.842 | 5.583 | 5.342 | 5.118 | 4.910 | 4.715 | 4.533 |
| 14  | 6.982 | 6.628 | 6.302 | 6.002 | 5.724 | 5.468 | 5.229 | 5.008 | 4.802 | 4.611 |
| 15  | 7.191 | 6.811 | 6.462 | 6.142 | 5.847 | 5.575 | 5.324 | 5.092 | 4.876 | 4.675 |

**END OF QUESTIONS**