

Level 3 Certificate in Advanced Business Calculations



International
Qualifications from EDI

Syllabus

Effective from 2001

INTRODUCTION

EDI is a leading international awarding body that was formed through the merger of the London Chamber of Commerce and Industry Examinations Board (LCCI) and GOAL a leading online assessment provider. EDI now delivers LCCI International Qualifications (LCCI IQ) through a network of over 5000 registered centres in more than 120 countries worldwide. Our range of business-related qualifications are trusted and valued by employers worldwide and recognised by universities and professional bodies.

Level 3 certificate in Advanced Business Calculations

Aims

The aims of this syllabus are to enable candidates to develop:

- A broad knowledge and understanding of advanced business calculations in relation to simple and compound interest, stock exchanges, business ownership, profitability and liquidity, investment appraisal, bankruptcy, depreciation of business assets and index numbers
- The ability to apply this knowledge and understanding in a business situation
- A knowledge and understanding of related terminology

Target Audience and Candidate Progression

This qualification is intended for candidates who have already passed the LCCI IQ Business Calculations Level 2 or equivalent.

It is specifically designed for persons intending to perform a range of advanced business calculations within a business environment.

It provides a suitable mathematical preparation for the LCCI IQ Level 4 examination, Cost Accounting and Quantitative Methods.

Taken with other LCCI IQ business courses, it provides a suitable preparation for candidates intending to work at an advanced level in a business environment.

The syllabus is also suitable for the student with a general interest in the subject.

Level of English Required

Candidates should have a standard of English equivalent to LCCI IQ English for Business Level 2, together with a standard knowledge of mathematical English equivalent to that used in LCCI IQ Business Calculations Level 2.

Structure of the Qualification

The level 3 Certificate in Business Calculations is a single unit qualification that consists of the range of topics detailed below.

- 1 Simple and compound interest
- 2 Stock exchanges
- 3 Business ownership
- 4 Profitability and liquidity
- 5 Investment appraisal
- 6 Bankruptcy
- 7 Depreciation of business assets
- 8 Index numbers

Guided Learning Hours

EDI recommends that 140 - 160 Guided Learning Hours (GLHs) provide a suitable course duration for an "average" candidate at this level. This figure includes direct contact hours as well as other time when candidates' work is being supervised by teachers. Ultimately, however, it is the responsibility of training centres to determine the appropriate course duration based on their candidates' ability and level of existing knowledge. EDI experience indicates that the number of GLHs can vary significantly from one training centre to another.

ASSESSMENT

Assessment Objectives

After successfully completing this examination candidates will be able to:

- Calculate simple and compound interest in business situations over periods measured in days, months, or years, including the use of the appropriate formulae
- Perform standard business calculations involving shares, debentures, stocks and unit trusts
- Perform standard business calculations involving revenue and costs, trading and profit and loss accounts, balance sheets, and including break-even analysis
- Perform standard business calculations involving the more common ratios used to assess profitability and liquidity
- Perform standard investment appraisal involving payback, average rate of return, internal rate of return, and net present value
- Perform standard bankruptcy calculations involving assets and liabilities, secured and unsecured creditors, and dividends
- Perform standard calculations of the depreciation of business assets involving the equal installment method and the diminishing balance method
- Perform calculations of index numbers involving basic indices relative to price and to quantity, including a change in the base year
- Use and understand appropriate mathematical and business terminology

Coverage of syllabus topics in examinations

Each examination will be broadly representative of the balance of topics in the detailed syllabus. Some flexibility is appropriate in order to provide a suitable variety of questions and business contexts, and to maintain an appropriate balance of difficulty.

Each examination will include topics from most or all sections of the syllabus. A single question may relate to a single section of the syllabus, or to more than one section.

Important Note

The topics listed in the extended syllabus for Level 1 Commercial Calculations and Level 2 Business Calculations are also examinable in Level 3 Advanced Business Calculations examinations.

Examination format

- The time allowance for the examination is 3 hours
- Questions will normally be set within an appropriate business context
- Candidates will be required to answer all 8 questions

Candidate Answer Guidance

Marks are awarded for correct working as well as for correct answers and for an appropriate level of accuracy. Where a correct answer is seen, without working, a candidate will normally be given full marks for that section. However, where a question asks for a specific method, then that method must be used and shown, otherwise the candidate will normally receive no marks for that section. Candidates are advised that it is normally to their advantage to show all working.

Candidates who make an error at an early stage in a question will be given credit for later work if it involves a correct method, appropriate to the question.

Candidate Performance Measurement

Questions will not necessarily carry equal marks. Questions of different difficulty or different length will normally carry different marks.

Marks will be awarded for the appropriateness of the method used as well as for the accuracy of the answer.

Marks will not normally be reserved for appropriate use of English, correct use of grammar, for a specific format of answer, or for presentation, except where specifically stated in the question (such as asking for the answer in a particular format). Candidates should, however, be aware of the need for clear, intelligible and unambiguous answers. An answer must be comprehensible in order to gain marks.

Certification

Successful candidates will be awarded the level 2 Certificate in Advanced Business Calculations based on the achievement of the percentages and grades below.

| | |
|-------------|-----|
| Pass | 50% |
| Merit | 60% |
| Distinction | 75% |

Recommended Reading List and Support Material

Reading List

| Title | Author(s) | Publisher | ISBN Code |
|--|-------------------------------|------------------|------------------|
| Quantitative Methods | D Friend | Longman | 0582 22969 6 X |
| Accounting for Non-Accounting Students (4th edition) | J R Dyson | Pitmans | 0273 625756 |
| Accounting in a Business Context | Aidan Berry & Robin Jarvis | Pitmans | 0993 611052 |

Support Material

Model answers and past question papers as well as Annual Qualification Reviews (AQR's) are available from the LCCI website, www.lcci.org.uk

How To Offer This Qualification

To offer this qualification you must be an LCCI IQ registered examination centre. To gain centre approval please contact Customer Support on 08700 818008 between the hours of 0830 and 1700 (GMT) Monday to Friday or by email on centresupport@ediplc.com. Alternatively you may contact your Regional LCCI Office or Co-ordinating Authority.

Syllabus Topic

Items Covered

1 Simple and compound interest

1.1 Terminology

Candidates must be able to:

a) Understand the terms: principal, rate of interest, time period, loan, overdraft, investor, borrower, drawer, drawee, acceptor, negotiable instrument, endorsement, banker's discount, maturity, face value, tender, at par, redemption, hire purchase terms, deposit, instalment payment, balance owing, present value

1.2 Simple interest

b) Calculate the amount of simple interest on a sum borrowed or deposited for:

- (i) a single year
- (ii) a number of years
- (iii) a number of months
- (iv) a number of days
- (v) a combination of the above, which may involve a fractional or decimal form

c) Calculate simple interest, using the formula:

$$\text{Interest} = \frac{\text{Principal} \times \text{Rate}(\text{percent}) \times \text{Number of years}}{100}$$

$$I = \frac{PRN}{100}$$

d) Use a rearranged formula to calculate:

(i) rate of interest: $R = \frac{100I}{PN}$

(ii) principal borrowed or deposited:
 $P = \frac{100I}{RN}$

(iii) the number of years for which the principal was borrowed or deposited:

$$N = \frac{100I}{PR}$$

e) Use the formula to calculate:

- (i) the rate of interest charged for discounting a bill of exchange
- (ii) the present value of a bill of exchange

(iii) the amount of interest payable on a discounted bill of exchange

- (iv) the amount of interest payable on a treasury bill before redemption
 - (v) the amount of interest charged on a hire purchase transaction
 - (vi) the rate of interest charged on a hire purchase transaction
- f) Use the 'products method' to calculate the amount of simple interest:
- (i) Payable *to* the holder of a bank account
 - (ii) Payable *by* the holder of a bank account
- g) Calculate the final balance figure on a bank account

1.3 Compound interest

- a) Calculate the amount of compound Interest on a sum deposited or borrowed for:
- (i) a single year
 - (ii) a number of years
 - (iii) a number of months
 - (iv) a number of days
 - (v) a combination of the above, which may involve a fractional or decimal form

- b) Calculate compound interest, using the formula:

Amount = Principal

$$\left(1 + \frac{\text{Rate of interest}}{100}\right)^{\text{Number of years}}$$

$$A = P \left(1 + \frac{R}{100}\right)^N$$

- c) Use the compound interest formula to calculate:
- (i) appreciation in value of property
 - (ii) an increase in a sum deposited in an interest bearing account
 - (iii) an increase in a sum borrowed
 - (iv) an increase in the value of an investment

- d) Compare amounts of compound interest and simple interest on a sum borrowed or deposited
- e) Compare an appreciation in value of property at compound interest with the cost of a loan at simple interest to purchase the property
- f) Use the rearranged compound interest formula to calculate:

- (i) The present value (P) of an investment

$$P = \frac{A}{\left(1 + \frac{R}{100}\right)^N}$$

- (ii) The rate of interest (R) using $\left(1 + \frac{R}{100}\right)^N = \frac{A}{P}$

2 Stock exchanges

2.1 Terminology

Candidates must be able to:

- a) Understand the terms: issued capital, ordinary shares, preference shares, par (or nominal) value, market value, share dividend, percentage yield, debenture, interest rate, stock, unit price, bid and offer prices, commission charge, investor's income

2.2 Company shares

- b) Calculate the value of a purchase and/or a sale of shares
- c) Calculate commission costs in the purchase and sale of shares
- d) Calculate profits or losses from the purchase and sale of shares
- e) Calculate dividend payments on shares
- f) Calculate the percentage yield on an investment in shares

2.3 Debentures

- a) Calculate the value of a purchase and/or a sale of debentures
- b) Calculate the interest/payment on debentures

- c) Calculate the profit remaining for shareholders after payment of interest on debentures
- d) Calculate the percentage yield on an investment in debentures

2.4 Stocks

- a) Calculate the value of a purchase and/or a sale of stock
- b) Calculate commission costs in the purchase and sale of stock
- c) Calculate interest payments on stock
- d) Calculate profits or losses from the purchase and sale of stock
- e) Calculate the percentage yield on an investment in stock

2.5 Unit trusts

- a) Calculate the value of a purchase and/or a sale of units
- b) Calculate commission charges in the purchase and sale of units
- c) Calculate the profits or losses from the purchase and sale of units
- d) Calculate dividend payments on units
- e) Calculate the percentage yield on an investment in units

3 Business ownership

3.1 Terminology

Candidates must be able to:

- a) Understand the terms: sole trader, partnership, limited company, fixed costs, variable costs, total costs, cost price, selling price, opening stock, closing stock, average stock, cost of stock sold (cost of sales or cost of goods sold), gross profit or loss, net profit or loss, revenue break-even point, overhead expenses, turnover, fixed assets, current assets, amounts due after more than 1 year (long term liabilities), amounts due within 1 year, (current liabilities), capital invested, net worth

3.2 Revenue and costs

- a) Calculate fixed costs
- b) Calculate variable costs
- c) Calculate total costs
- d) Interpret a figure for total costs
- e) Calculate sales revenue

3.3 Break-even analysis

- a) Draw and interpret a break-even chart
- b) Use a break-even chart to estimate:
 - (i) A break-even point
 - (ii) The level of output which yields a specific level of profit
 - (iii) The profit or loss at a specific level of output
- c) Calculate a break-even point
- d) Calculate the level of output which yields a specific level of profit
- e) Calculate the profit or loss at a specific level of output
- f) Calculate the contribution per unit

3.4 Trading and profit and loss accounts

- a) Calculate average stock
- b) Calculate cost of stock sold
- c) Calculate gross profit
- d) Calculate overhead expenses
- e) Calculate net profit

3.5 Balance sheets

- a) Calculate fixed assets
- b) Calculate current assets
- c) Calculate amounts due after more than 1 year (long term liabilities)
- d) Calculate amounts due within 1 year (current liabilities)
- e) Calculate total assets and total Liabilities

- f) Calculate capital
 - (i) At the start of a year
 - (ii) At the end of a year
- g) Calculate net worth

4 Profitability and liquidity

4.1 Terminology

Candidates must be able to:

- a) Understand the terms: ratio, turnover, working capital, total borrowings, stockturn

4.2 Ratios to assess profitability

- a) Calculate a gross profit percentage
- b) Calculate a rate of stock turnover per annum, in weeks and in days
- c) Calculate a net profit percentage
- d) Calculate an expense ratio
- e) Calculate a percentage return on capital invested
- f) Interpret ratios to assess profitability

4.3 Ratios to assess Liquidity

- a) Calculate a working capital (current) ratio
- b) Calculate an acid test ratio (quick asset ratio, liquid capital ratio)
- c) Calculate a borrowing (gearing) ratio
- d) Calculate an average credit granted ratio
- e) Calculate an average credit taken ratio
- f) Interpret ratios to assess liquidity

5 Investment appraisal

5.1 Terminology

Candidates must be able to:

- a) Understand the terms: opportunity cost, depreciation, investment project

5.2 Payback

- a) Calculate, using the payback method of investment appraisal

5.3 Average rate of return

- a) Calculate, using the average rate of return method of investment appraisal

5.4 Net present value

- a) Calculate, using the net present value method of investment appraisal

5.5 Internal rate of return

- a) Calculate, using the internal rate of return method of investment appraisal

5.6 Appraisal

- a) Interpret calculations of investment appraisal
- b) Make a judgement on alternative investment projects

6 Bankruptcy

6.1 Terminology

Candidates must be able to:

- a) Understand the terms: assets and liabilities, secured and unsecured creditors, rate of dividend, insolvency, winding up expenses

6.2 Assets and liabilities

- a) Calculate the liabilities and assets of an insolvent business
- b) Express the assets as:
 - (i) a fraction of the liabilities
 - (ii) a percentage of the liabilities
- c) Calculate the net assets of an insolvent business
- d) Calculate the value of assets, given the rate of dividend, expenses of winding up the business and any liabilities

6.3 Secured and unsecured creditors

- a) Calculate the sum owing to secured creditors
- b) Calculate the sum available for unsecured creditors

6.4 Dividend

- a) Calculate the dividend available for unsecured creditors
- b) Calculate the sum payable to an unsecured creditor
- c) Calculate the amount owed to an unsecured creditor who receives a stated payment

7 Depreciation of business assets

7.1 Terminology

Candidates must be able to:

- a) Understand the terms: asset, depreciation, book value, residual (scrap) value, working life, depreciation schedule

7.2 Equal instalment method

- a) Calculate total depreciation over a period of years after allowing for any residual (scrap) value
- b) Calculate annual depreciation
- c) Calculate the book value of an asset after deduction of depreciation
- d) Prepare a depreciation schedule to show annual depreciation, accumulated depreciation and book value at the year end

7.3 Diminishing balance method

- a) Calculate annual depreciation
- b) Calculate the book value of an asset after deduction of depreciation
- c) Prepare a depreciation schedule to show annual depreciation, accumulated depreciation and book value at the year end

8 Index numbers

8.1 Terminology

Candidates must be able to:

- a) Understand the terms: base year, current year, price index, quantity index, composite (or general) index, weighted

8.2 Price index number

- a) Calculate a price relative

8.3 Quantity index number

- b) Calculate a quantity relative

8.4 Composite (or general) index number

- c) Calculate a weighted average index number

8.5 Change of base year

- a) Calculate a change of base year for a given index number
- b) Calculate a chain base index

Note: Candidates will not be expected to use Laspeyre, Marshall-Edgeworth, Fisher or Paasche indices.

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and performance

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