



Paper P1

PERFORMANCE OPERATIONS

Acorn Chapters

- 1 Classification of costs and mathematics for budgets
- 2 Advanced mathematics for budgets
- 3 Absorption, marginal and activity based costing
- 4 Standard costing and variance analysis
- 5 Modern manufacturing methods
- 6 Environmental cost accounting
- 7 Mathematical techniques for decision-making
- 8 Investment appraisal
- 9 Asset replacement theory
- 10 Working capital
- 11 Managing inventories
- 12 Managing trade receivables and payables
- 13 Cash flow forecasts and managing cash
- 14 Short term borrowing and investing
- 15 The normal distribution

Syllabus overview

This paper primarily deals with the tools and techniques that generate information needed to evaluate and control present and projected performance. Thus, forecasting key variables, recognising uncertainties attached to future events, is a basis for budget construction; the budget is then used with costing systems to evaluate actual performance. Project appraisal relies similarly on future financial projections to provide the information on which managers can evaluate expected performance and actual outcomes. Both budgeting and project appraisal emphasise the critical importance of optimising cash flow and the final section of the paper continues this theme from the perspective of managing working capital.

Syllabus structure

The syllabus comprises the following topics and study weightings:

A	Cost Accounting Systems	30%
B	Forecasting and Budgeting Techniques	10%
C	Project Appraisal	25%
D	Dealing with Uncertainty in Analysis	15%
E	Managing Short Term Finance	20%

Assessment strategy

There will be a written examination paper of three hours, plus 20 minutes of pre-examination question paper reading time. During the 20 minutes you can: read the question paper and annotate or highlight the question paper. However you will not be allowed to: open the answer book; write in the answer book; add any loose sheets/supplements to your answer book; or use calculators. Failure to comply with these rules will be considered as a serious breach of the exam regulations. The examination paper will have the following sections:

Section A	20 marks	A variety of compulsory objective test questions, each worth
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		between two and four marks. Mini scenarios may be given, to which a group of questions relate.
Section B	30 marks	Six compulsory short answer questions, each worth five marks. A short scenario may be given, to which some or all questions relate.
Section C	50 marks	One or two compulsory questions. Short scenarios may be given, to which questions relate.

A – COST ACCOUNTING SYSTEMS – 30%

1. Discuss costing methods and their results.

(a) compare and contrast marginal (or variable), throughput and absorption accounting methods in respect of profit reporting and stock valuation;

(b) discuss a report which reconciles budget and actual profit using absorption and/or marginal costing principles;

(c) discuss activity-based costing as compared with traditional marginal and absorption costing methods, including its relative advantages and disadvantages as a system of cost accounting;

(d) apply standard costing methods, within costing systems, including the reconciliation of budgeted and actual profit margins;

(e) explain why and how standards are set in manufacturing and in service industries with particular reference to the maximisation of efficiency and minimisation of waste;

(f) interpret material, labour, variable overhead, fixed overhead and sales variances, distinguishing between planning and operational variances;

(g) prepare reports using a range of internal and external benchmarks and interpret the results;

(h) explain the impact of just-in-time manufacturing methods on cost accounting and the use of 'back-flush accounting' when work-in-progress stock is minimal.

- Marginal (or variable), throughput and absorption accounting systems of profit reporting and stock valuation.
- Activity-based costing as a system of profit reporting and stock valuation.
- Criticisms of standard costing in general and in advanced manufacturing environments in particular.
- Integration of standard costing with marginal cost accounting, absorption cost accounting and throughput accounting.
- Manufacturing standards for material, labour, variable overhead and fixed overhead.
- Price/rate and usage/efficiency variances for materials, labour and variable overhead.
- Further subdivision of total usage/efficiency variances into mix and yield components. (Note: The calculation of mix variances on both individual and average valuation bases is required).
- Fixed overhead expenditure and volume variances. (Note: the subdivision of fixed overhead volume variance into capacity and efficiency elements will not be examined).
- Planning and operational variances.

- Standards and variances in service industries (including the phenomenon of 'McDonaldization'), public services (e.g. Health), (including the use of 'diagnostic related' or 'reference' groups), and the professions (e.g. labour mix variances in audit work).



- Sales price and sales revenue/margin volume variances (calculation of the latter on a unit basis related to revenue, gross margin and contribution margin). Application of these variances to all sectors, including professional services and retail analysis.
- Interpretation of variances: interrelationship, significance.
- Benchmarking.
- Back-flush accounting in just-in-time production environments. The benefits of just-in-time production, total quality management and theory of constraints and the possible impacts of these methods on cost accounting and performance measurement.

2. Explain the role of MRP and ERP system.

(a) explain the role of MRP and ERP systems in supporting standard costing systems, calculating variances and facilitating the posting of ledger entries.

- MRP and ERP systems for resource planning and the integration of accounting functions with other systems, such as purchase ordering and production planning.

3. Apply principles of environmental costing.

(a) apply principles of environmental costing in identifying relevant internalised costs and externalised environmental impacts of the organisation's activities.

- Types of internalised costs relating to the environment (e.g. emissions permits, taxes, waste disposal costs) and key externalised environmental impacts, especially carbon, energy and water usage. Principles for associating such costs and impacts with activities and output.

B – FORECASTING AND BUDGETING TECHNIQUES – 10%

1. Explain the purposes of forecasts, plans and budgets.

(a) explain why organisations prepare forecasts and plans;

(b) explain the purposes of budgets, including planning, communication, co-ordination, motivation, authorisation, control and evaluation, and how these may conflict.

- The role of forecasts and plans in resource allocation, performance evaluation and control.
- The purposes of budgets and the budgeting process, and conflicts that can arise (e.g. between budgets for realistic planning and budgets based on 'hard to achieve' targets for motivation).

2. Prepare forecasts of financial results.

(a) calculate projected product/service volumes employing appropriate forecasting techniques;

(b) calculate projected revenues and costs based on product/service volumes, pricing strategies and cost structures.

- Time series analysis including moving totals and averages, treatment of seasonality, trend analysis using regression analysis and the application of these techniques in forecasting product and service volumes.
- Fixed, variable, semi-variable and activity-based categorisations of cost and their application in projecting financial results.



3. Prepare budgets based on forecasts.

(a) prepare a budget for any account in the master budget, based on projections/forecasts and managerial targets;

(b) apply alternative approaches to budgeting.

- Mechanics of budget construction: limiting factors, component budgets and the master budget, and their interaction.
- Alternative approaches to budget creation, including incremental approaches, zero-based budgeting and activity-based budgets.

C – PROJECT APPRAISAL – 25%

1. Prepare information to support project appraisal.

(a) explain the processes involved in making long-term decisions;

(b) apply the principles of relevant cash flow analysis to long-run projects that continue for several years;

(c) calculate project cash flows, accounting for tax and inflation, and apply perpetuities to derive 'end of project' value where appropriate;

(d) apply activity-based costing techniques to derive approximate 'long-run' product or service costs appropriate for use in strategic decision making;

(e) explain the financial consequences of dealing with long-run projects, in particular the importance of accounting for the 'time value of money';

(f) apply sensitivity analysis to cash flow parameters to identify those to which net present value is particularly sensitive;

(g) prepare decision support information for management, integrating financial and non-financial considerations.

- The process of investment decision making, including origination of proposals, creation of capital budgets, go/no go decisions on individual projects (where judgements on qualitative issues interact with financial analysis), and post audit of completed projects.
- Identification and calculation of relevant project cash flows taking account of inflation, tax, and 'final' project value where appropriate.
- Activity-based costing to derive approximate 'long-run' costs appropriate for use in strategic decision making.
- Need for and method of discounting.
- Sensitivity analysis to identify the input variables that most affect the chosen measure of project worth (payback, ARR, NPV or IRR).
- Identifying and integrating non-financial factors in long-term decisions.
- Methods of dealing with particular problems: the use of annuities in comparing projects with unequal lives and the profitability index in capital rationing situations.

2. Evaluate project proposals.

(a) evaluate project proposals using the techniques of investment appraisal;

(b) compare and contrast the alternative techniques of investment appraisal;



(c) prioritise projects that are mutually exclusive, involve unequal lives and/or are subject to capital rationing.

- The techniques of investment appraisal: payback, discounted payback, accounting rate of return, net present value and internal rate of return.
- Application of the techniques of investment appraisal to project cash flows and evaluation of the strengths and weaknesses of the techniques.

D – DEALING WITH UNCERTAINTY IN ANALYSIS – 15%

1. Analyse information to assess the impact on decisions of variables with uncertain values.

(a) analyse the impact of uncertainty and risk on decision models that may be based on relevant cash flows, learning curves, discounting techniques etc;

(b) apply sensitivity analysis to both short and long-run decision models to identify variables that might have significant impacts on project outcomes;

(c) analyse risk and uncertainty by calculating expected values and standard deviations together with probability tables and histograms;

(d) prepare expected value tables;

(e) calculate the value of information;

(f) apply decision trees.

- The nature of risk and uncertainty.
- Sensitivity analysis in decision modelling and the use of computer software for “what if” analysis.
- Assignment of probabilities to key variables in decision models.
- Analysis of probabilistic models and interpretation of distributions of project outcomes.
- Expected value tables and the value of information.
- Decision trees for multi-stage decision problems.

E – MANAGING SHORT TERM FINANCE – 20%

1. Analyse the working capital position and identify areas for improvement.

(a) explain the importance of cash flow and working capital management;

(b) interpret working capital ratios for business sectors;

(c) analyse cash-flow forecasts over a twelve-month period;

(d) discuss measures to improve a cash forecast situation;

(e) analyse trade debtor and creditor information;

(f) analyse the impacts of alternative debtor and creditor policies;

(g) analyse the impacts of alternative policies for stock management.

- The link between cash, profit and the balance sheet.
- The credit cycle from receipt of customer order to cash receipt and the payment cycle from agreeing the order to making payment.

- Working capital ratios (e.g. debtor days, stock days, creditor days, current ratio, quick ratio) and the working capital cycle.
- Working capital characteristics of different businesses (e.g. supermarkets being heavily funded by creditors) and the importance of industry comparisons.
- Cash-flow forecasts, use of spreadsheets to assist in this in terms of changing variables (e.g. interest rates, inflation) and in consolidating forecasts.
- Variables that are most easily changed, delayed or brought forward in a forecast.
- Methods for evaluating payment terms and settlement discounts.
- Preparation and interpretation of age analyses of debtors and creditors.
- Establishing collection targets on an appropriate basis (e.g. motivational issues in managing credit control).
- Centralised versus decentralised purchasing.
- The relationship between purchasing and stock control.
- Principles of the economic order quantity (EOQ) model and criticisms thereof.

2. Identify short-term funding and investment opportunities.

(a) identify sources of short-term funding;

(b) identify alternatives for investment of short-term cash surpluses;

(c) identify appropriate methods of finance for trading internationally.

- Use and abuse of trade creditors as a source of finance.
- Types and features of short-term finance: trade creditors, overdrafts, short-term loans and debt factoring.
- The principles of investing short term (i.e. maturity, return, security, liquidity and diversification).
- Types of investments (e.g. interest-bearing bank accounts, negotiable instruments including certificates of deposit, short-term treasury bills, and securities).
- The difference between the coupon on debt and the yield to maturity.
- Export finance (e.g. documentary credits, bills of exchange, export factoring, forfeiting).