

# FINANCIAL MANAGEMENT, SYSTEMS AND TECHNIQUES

**Certificate stage examination  
10 June 2004**

From 2.00 pm to 5.00 pm  
plus ten minutes reading time from 1.50 pm to 2.00 pm.

## ***Instructions to candidates***

***Answer six questions: You must answer the two compulsory questions contained in Section A, plus any four questions from Section B.***

*All workings must be shown. Where calculations are required using formulae, calculators may be used but steps in the working must be shown. Calculations with no evidence of this (for example, using the scientific functions of calculators) will receive no credit. Programmable calculators are not permitted in the examination room.*

*Formula sheets, statistical tables, graph paper and cash analysis paper are available from the invigilator, where applicable.*

*Where a question asks for a specific format or style, such as a letter, report or layout of accounts, marks will be awarded for presentation and written communication.*



**Section A (Answer both questions)**

**1** Eastland is a semi-autonomous agency formed, in the aftermath of recent crises, to provide help and support to people and businesses in rural and farming areas within a large upland swathe of Northern England. Much of its funding is received from sponsoring government departments and local authorities and is based upon programmes of assistance agreed by the management board.

Apart from the expenses of a small administrative core, most of Eastland's expenditure is project based and experience to date suggests that it is not incurred uniformly over time. As a result of the way inward funds have been paid to the organisation, and also due to initial problems in completing and paying for projects on time, Eastland has built up considerable cash balances. It is now looking to invest these balances and also to introduce an efficient method of managing them.

Two alternative approaches have been suggested by the organisation's accountant. They involve the use of the Baumol model and the Miller-Orr model.

The proposal being considered is to place the cash funds in the hands of investment managers who have estimated that they can achieve a return of 6% per annum investing in medium to long term investments. The annual expenditure of Eastland is budgeted at £2,250,000 but this will be spread unevenly throughout the year. Cash flow requirements would be met by drawing down funds from the investments. There is a fee of £50 payable on each withdrawal. An exercise has been carried out which predicts that the variance on the value of daily cash flows is £500. Eastland has decided that its current account balance should not drop below £5,000.

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- **Requirement for question 1**

You work for one of the sponsoring local authorities which has representation on the board and which has helped out from time to time in providing financial advice and support. You have been asked to produce a report for the next board meeting covering the following:

- (a) An assessment of the Baumol and Miller-Orr models which outlines their strengths and weaknesses and explains what benefits their use could provide for Eastland. 8
  - (b) A reasoned conclusion based upon the above assessment that recommends which of the approaches would be the most appropriate to the needs of Eastland. 3
  - (c) Using the preferred model and the data provided produce appropriate information to assist Eastland in managing its cash balances, and provide a full explanation of how the information should be used. 9
- (20)**
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# 2

Southdale District Council provides a sports centre for the inhabitants of the small market town of Castle Bainbridge and its immediate environs. The manager of the centre is seeking to introduce a range of new fitness and exercise classes targeted at the over 55 age group. He believes that, if properly marketed and priced at affordable levels, the new courses could be extremely successful and that he could programme 15 courses per year into the workload of the centre. Each course would have a capacity for 20 people.

The centre is working within very tight financial constraints and it is vital that any additional activity is at least self financing and at best capable of returning a surplus.

The manager and his senior staff have put together some estimates of price and demand probability which are summarised in the table below

Price per person	No of places taken up	Probability of demand
£30	15	0.3
	12	0.5
	10	0.2
£25	18	0.3
	15	0.5
	12	0.2
£20	20	0.5
	18	0.4
	15	0.1

The Finance Department has provided some cost figures which show that:

1. There would be a small variable cost per place on each course due largely to equipment requirements of £2.50.
2. Fixed costs per course would arise from staffing and would amount to £300.
3. There should be some additional benefit to the centre from increased bar and refreshment sales and it is estimated that the net contribution per person per course would be £1.50.

The manager is aware that these figures are a bit “rough and ready” and would like to improve the process in the event of similar exercises being carried out in the future.

**• Requirement for question 2**

You are employed in the Council's finance department and the centre manager has asked for a financial appraisal of the proposal. Prepare a report which evaluates the proposal and which includes:

- (a) A probability pay off table which estimates the profit at each probability level and the expected profit at each price level. 9
- (b) An assessment, at each price level, of the probability that a loss will be made on the programme of courses. 3
- (c) Comments on the approach taken and on the results of the analysis, with recommendations on the action to be taken. 3
- (d) Suggestions on how sampling techniques could be used in future to improve the reliability and accuracy of the data used. 5

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### Section B (Answer four questions)

**3** Midderland University is planning the refurbishment of student catering facilities at its main campus. This will involve some construction and alteration work and a full redesign of the kitchen and servery areas. As the building is listed there are also a number of planning and building control issues. The project will require careful management in dealing with outside bodies and in meeting the needs of a variety of internal stakeholders.

Initial work has been carried out to identify the main activities and the dependencies which exist between them. Information on activity times is now available and this is summarised in the table below:

Activity	Preceding activity	Duration of activity (days)	Additional information
A	-	5	-
B	A	15	Can be reduced by 5 days by using additional staff at a cost of £200 per day
C	B	20	An alternative contractor could be used who would complete this in 8 days but at an extra cost of £8,000
D	-	8	-
E	C	7	-
F	E	25	Weekend working could reduce the time by 8 days, costing £500 per weekend
G	F	20	A change in the specification could reduce the time taken by 3 days but this would not meet the design brief and might add 1 day to activity E
H	C	12	-
I	E	9	Can be reduced by 3 days by using additional staff at a cost of £400 per day
J	H	3	-
K	I	3	-
L	D	18	This could be reduced to 14 days but would add £6,000 of extra costs
M	GJK	6	-
N	LM	7	Could reduce by 1 day at cost of £1,500

The project has a budget of £200,000 and initial estimates based upon the normal duration are that it should come in £10,000 below budget. However, approval of the scheme was subject to it being introduced in time for the new academic year. This allows for 85 working days until completion. Both of these constraints are regarded as extremely important.

Some of the activities may be reduced in their duration but there is a cost implication to this. Details are shown in the final column of the above table.

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- **Requirement for question 3**

- (a) Draw a network diagram which shows the critical path of the project. Calculate the normal duration of the project based on the data provided. 5
- (b) Compare the normal duration with the time allowed for completion and suggest what changes in the project plan should be made to ensure that the time constraint is met. Take into account the budget available. 5
- (c) In relation to the requirements of this project describe the main benefits of using network analysis techniques and the weaknesses of this approach as a method of project management. 5

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# 4

There is a long history of information system development failure stretching back to the 1980s and 1990s (cited in *Chaffey, 2003, 307*). The implication has often been that traditional structured methodologies are time consuming and inflexible and deliver systems which arrive too late and which no longer meet their original requirements. Rapid Applications Development (RAD) is viewed as a way in which these failures can be avoided.

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- **Requirement for question 4**

- (a) Suggest FIVE ways in which traditional methods could fail and suggest what could be done to avoid failure. 7
- (b) Explain what is meant by Rapid Applications Development, setting out the overall approach and explaining, in particular, what is involved at the prototyping stage. 5
- (c) What are the weaknesses of Rapid Applications Development? 3

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# 5

You work as a management accountant in a small public service organisation but you are known to have a special interest and a degree of expertise in the area of information systems.

You receive the following internal email:

**From:** Director of Finance  
**To:** Management Accountant  
**Subject:** Information Systems.

Need to pick your brains re information systems. Difficult to keep up and some of the terms used are not clear to me. Would like a meeting to discuss. Can you arrange with Pam? Afraid it'll have to be early one day this week. 7.30 to 8.30 O.K.?

To help us both what I need are clear definitions of DSS and EIS and an idea of what different jobs they do. More important is for you to explain OLAP to me, sometimes called data warehousing I think. What is it, how does it work and how could we use it? Examples if you can think of any and anything else you might think useful.

Do what you can and I'll see you later this week.

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- **Requirement for question 5**

Reply to the email, ensuring that you provide:

- (a) Definitions of DSS (Decision Support Systems) and EIS (Executive Information Systems) and an explanation of the different roles that they fulfil. 7
- (b) An explanation of OLAP (Online Analytical Processing)/ data warehousing which covers what it is, how it works and how it could be used, with examples as appropriate. 6
- (c) A brief description of data mining and data marts. 2

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# 6

Northwick College has been experiencing cash flow problems and has identified the delay in collecting fee income on invoice as a major source of difficulty. Invoices are sent where employers or other sponsors have accepted responsibility for fee payment and this accounts for 60% of the overall fee income of £4m. College management has decided to investigate the possibility of offering a discount for early payment.

The current position is that only 20% of debtors pay within 30 days and the average debt repayment period of the remainder is 62 days. There is some uncertainty whether an offer of discount will have the desired outcome and also whether it would be financially viable.

The College is a member of a benchmarking club and has been able to obtain data relating to the experiences of similar colleges which, in the face of the same problems as those being faced by Northwick, have introduced discount terms in recent years. The data is summarised in the table below.

% discount offered	% take-up by debtors
1.0	25
1.5	35
2.5	55
3.0	62
3.5	75
4.0	87

The take up figures refer to those debtors previously paying after 30 days who would claim discount for paying within 30 days.

The College has overdraft facilities for which it is charged a rate of 7% pa (simple interest).

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• **Requirement for question 6**

- (a) Calculate the correlation coefficient for the relationship between % of discount offered and the % take up by debtors and comment upon it. 5
- (b) Determine the relationship between the two variables using simple regression analysis and calculate the % take up which would result from offering a 2% discount. 5
- (c) Calculate the financial effect of offering a 2% discount and comment upon your findings. 5

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**7** Westshire County Council has a reputation for good, solid, financial management built upon traditional foundations and methodologies. It has a centralised finance function which provides a full range of financial services to the departments of the council. The finance department has not found it easy to cope with change. It has a strong culture which has been reinforced by a tendency to appoint senior staff from within and which has also been supported by a strong tradition of training and development and a commitment to the accounting profession.

In a break from tradition, the new County Treasurer has been appointed from outside and she is immediately seeking to make changes. She is not willing to tackle the issue of centralisation in the short term but there are two issues which she wishes to progress as soon as possible. Both issues concern the relationship between the department and the rest of the council.

The first issue is that she feels the department should become more customer focused in the way it produces and delivers financial information and that some attempt should be made to carry out a stakeholder analysis to identify needs. The second issue relates to the way in which the cost of financial services is charged to other departments. At the moment this is done on an overhead recovery basis which is unsatisfactory and does not fit in with the idea of treating departments as customers. It is also not consistent with the Best Value Accounting Code of Practice (BVACOP) and has been attracting adverse comments from external audit.

She has asked you to provide her with a briefing setting out some of the key issues and up to date thinking in these two areas.

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- **Requirement for question 7**

Produce a briefing note for the County Treasurer which covers:

- (a) An outline stakeholder analysis which identifies the main internal and external customers of the department and describes the different types of support they need and the nature of the financial information they require. 9
- (b) Suggestions for changing the charging base with an indication of the likely benefits and drawbacks. 6

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