

## ACCOUNTING FOR DECISION MAKING

### Diploma Stage examination

6 December 2006

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

#### ***Instructions to candidates***

Answer **four** questions in total.

**One** compulsory question from **Section A**

**Three** of the four questions from **Section B**

*The question in Section A carries, in total, 40 marks*

*The questions in Section B each carry a total of 20 marks*

*All workings should be shown. Where calculations are required using formulae, calculators may be used but steps in the workings 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.*

*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.*

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



## SECTION A (Compulsory)

1

The Students' Union of Cranmer University is housed in a self-contained 1960s building which overlooks the river, at the other side of which is the imposing façade of the city's Norman cathedral. The Union refectory and coffee bar area has full length picture windows which look out onto a large balcony area. This area has been deemed to be unsafe and has been unused for several years. During this time it has become somewhat neglected and has become an eyesore both from within and without the building. Some work will have to be carried out even if it involves a minimum level of tidying and decorating.

The new General Manager of the Students' Union sees the balcony as a potential area to be developed in the search for identifying new income streams for the union whose financial situation is quite precarious.

The initial problem is that before being able to develop the balcony for commercial use it would have to be tidied up and made safe in order to comply with building regulations. This would need to be done before planning permission could be sought and could involve a certain amount of investment without any guarantee of a return.

If the building inspector was satisfied with the building's safety then plans could be drawn up for commercial development. These plans would have to conform to very strict planning requirements. The building itself is grade 1 listed as it was in receipt of several international awards for architecture when it was built in the mid 1960s. Facing the building, the cathedral is a world heritage site and is visited by hundreds of thousands of people each year.

The General Manager has drawn up some outline plans following discussion with the University's building department and with building control and planning and conservation officers from the city council.

The initial building work could be carried out on two levels. The basic level of work would comprise simply doing repairs and maintenance work and a small amount of decorating in order to make the balcony structurally safe, and to improve its appearance from the outside. This would not make the balcony safe for use. The work would be carried out by the University as part of its role as owner and landlord of the building. There would be no cost to the Students' Union.

The alternative would involve a higher specification of work which would make the balcony safe for use but which would not involve any commercial development of the space. This work would cost £10,000 and would have to be funded by the Students' Union. It would not be carried out until planning permission was granted for further commercial development.

The building control officer has indicated that the first option would have a 100% chance of being approved by the council as the lack of public use would preclude any significant health and safety concerns. Without seeing any specific plans and prior to an actual building inspection the alternative course would have an 80% chance of being accepted.

Three possibilities for commercial development have been identified. Each of them would be dependent upon the essential safety work being carried out and the balcony being approved as safe for use.

Option A would involve a low level commercial development. This would comprise six tables with umbrellas and the creation of access through to the refectory. Each table would seat four people, giving a capacity of twenty four (covers).

Option B would involve a more intensive use of space with a combination of tables and benching to give forty covers. This option would also include a canopy which could be extended for use in wet weather. Commercial sponsorship would be sought for this development which would result in advertising space on the canopy and the sides of the balcony.

Options A and B would allow for the use of the balcony as an extension of the refectory/coffee bar area and would generate income accordingly.

Option C would involve a development which would be basically the same as Option B. The Students' Union also operates as an entertainment venue and on several nights each week effectively becomes a night club. Option C would involve using the balcony as an extension of the main bar area. This would require the erection of an external fire escape which would be costly, but it would increase the licensed night club capacity significantly.

None of these options could be guaranteed planning permission. The General Manager favours Option C but admits that the likelihood of receiving planning permission for this is only about 20%. The probability of receiving planning permission for the other options is rated as

Option A – 80%

Option B – 50%

The likely levels of costs and income from each of the options have been identified and projected forward for a period of six years. The main uncertainty relates to the income earning potential of the options. Three levels of demand were determined based upon pessimistic, normal and optimistic views. These were derived subjectively as a result of meetings of relevant staff and student officers convened by the General Manager. The net cash flows were then discounted using 9% which is judged to be the cost of capital for the Students' Union based upon current availability of loan facilities negotiated with the bank. The present value figures which were then derived were assigned probabilities after more discussions. Note that these figures do not take account of the cost of the initial safety work which would be a pre-requisite for any commercial development but do take into account the capital costs involved in the commercial development.

Option	Level of demand	Present value £	Probability %
A	Optimistic	20,000	40
	Neutral	12,000	40
	Pessimistic	8,000	20
B	Optimistic	32,000	30
	Neutral	20,000	40
	Pessimistic	10,000	30
C	Optimistic	50,000	30
	Neutral	30,000	30
	Pessimistic	20,000	40

The Treasurer of the Students' Union is an elected officer who would normally serve for one year during which he/she would take sabbatical leave from their studies. This year's Treasurer is an economics graduate who is planning to commence a masters degree course at the end of her sabbatical year. Her main academic interest is in public sector economics. She has written a note to the General Manager as follows:

To: GM  
From: Treasurer

Dan

Thanks for your support at Wednesday's meeting, and in my year as Treasurer to date. It's a steep learning curve but your help is invaluable.

I would really like to make progress on the balcony project and get some decisions made as soon as possible. I look forward to the outcomes of your analysis.

I think I've probably mentioned to you before that I studied public sector decision making in my degree and it's a particular area of interest for me. I'm a little confused about where we might fit in with this. We are a registered charity and a not-for-profit organisation but the balcony decision seems that it will be taken on commercial grounds only. Is this right? Should we not be trying to include non financial costs and benefits into our deliberations? I came across an approach called weighted benefit analysis. Are you familiar with it? I wondered how it might work in this scenario and whether it would be worth considering. What do you think?

The other thing I am interested in is your idea for setting up systems for post auditing of investment decisions. I know it was probably just an idea off the "top of your head" at the last senior management group meeting but I'd like to explore it.

Can you get back to me on these issues and perhaps we could have a chat about them at our next scheduled meeting which is the end of next week.

Thanks, Sally

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You are the Finance Officer and acting Assistant General Manager. The General Manager is not an accountant and has relied upon you quite heavily for advice and guidance on this project and on the decision making process.

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• **Requirement for question 1**

- (a) Using an appropriate form of analysis, determine the range of options available in respect of the balcony project. Evaluate them and produce your recommendations. Prepare a brief note explaining what you have done and advising upon how the outcomes of the analysis should be used. Your advice should take into account what you see to be the main benefits and potential drawbacks of your methodology. 24
- (b) The General Manager has asked you to draft a reply to the Treasurer on his behalf.
- (i) He would like you to explain what weighted benefit analysis is, how it might be used in this situation and whether the Students' Union could benefit from it. What he said to you was "I don't think we need to be doing this but I'm not an expert. Can you make it clear to me in your note what it would involve and I'm relying on you for a recommendation one way or another. I'd like to get it out of the way so that we can proceed". 8
- (ii) He also wants you to deal with the issue of post auditing of investment decisions. How would it work and why might it be of particular benefit to the Students' Union as an organisation? 8

**(40)**

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**SECTION B (Answer three questions from this section)**

**2**

Zintox plc is considering investing in new plant which will have an operational life of seven years. The cost of acquisition would be £2.5m and the investment is expected to generate a net cash inflow of £550,000 in years one and two and thereafter a net cash inflow of £600,000 per annum. At the end of seven years the plant would be disposed of at an expected valuation of £50,000.

Writing down allowances would be at 20% per annum based upon a reducing balance. Corporation tax is 33% and is payable at the end of the following year.

The capital structure of the company consists of:

- 12m ordinary shares of £1 each, currently being traded on the stock exchange at £1.70 ex div.
- 4m £1 6% preference shares valued at £0.75 per share.
- 40,000 12% irredeemable debentures with a face value of £100 currently valued at £133.

The dividend on ordinary shares last year was 15p and this is expected to increase by 5% per annum in the foreseeable future.

The current return on government securities is 6% and the average stock market return is 10%. The company has a beta value of 1.1.

Cash flow figures are nominal.

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• **Requirement for question 2**

- (a) Calculate the net present value of the proposed investment after tax using a weighted average cost of capital based upon:
- (i) The dividend valuation model.
  - (ii) The capital asset pricing model.
- (b) Discuss the merits and limitations of each approach and recommend whether the proposed investment should go ahead.

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# 3

The Thyme Theatre is located in the city centre of Middlemouth and is owned by Middlemouth City Council (MCC). MCC is a metropolitan borough council which serves a population of 350,000 and has a total net revenue budget of £585m in 2006/2007. The city centre has benefited from public and private investment in recent years and is now regarded as an important focus for entertainment and the arts.

The city is proud of its artistic heritage, represented by a nationally recognised literary heritage, its unique architectural style and, more recently, its associations with popular cultural movements. MCC reflects this in its published strategy and, in particular, its Vision 20/20 document which states that a priority of the council is to maintain and develop the city's place as a centre of national and international culture.

Education, Arts and Leisure Services (EALS) is the largest department in the council and is responsible for education across the city as well as the provision and support of arts, leisure and tourism facilities. The Thyme Theatre is subsidised through the Arts and Tourism budget. The subsidy for 2006/2007 is £280,000. This figure has been rising steadily for the past seven years.

The Thyme Theatre was built in 1923 and is one of five theatres in and around the city centre. Whilst the population of the city is only 350,000 it regards itself as the "regional capital" within an overall metropolitan conurbation of 1.5m people. The theatre is a receiving house. That is, it stages productions produced by other bodies. These include professional productions and productions of local amateur groups. The programme is varied and includes plays, musicals, stand up comedy and music concerts as well as a long run pantomime over the Christmas period. The theatre is used on average for 55% of the time.

The Thyme Theatre is the only civic-owned theatre in Middlemouth or in the whole of the metropolitan area. The council's commitment to the arts is such that the Theatre is highly valued as a civic facility and it proves invaluable as a means of facilitating amateur dramatic activity within the region. The council, however, is unwilling to countenance a continuation of the current position and it is clear that the financial outlook must be improved for the theatre to maintain its viability.

The Theatre Management Committee is a sub committee of Education, Arts and Leisure. Concern has been building over the theatre's financial performance and also in relation to its performance in general. The Committee has resolved to introduce a performance management system and has agreed to some work being carried out on benchmarking.

You are the management accountant responsible for the theatre.

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• **Requirement for question 3**

Prepare a report to the theatre Management Committee outlining:

- (a) An appropriate benchmarking methodology to meet the needs of the theatre. 5
- (b) Suggestions for performance measures which could be used (including five examples covering financial and/or non financial performance). 5
- (c) The main benefits which should accrue from this approach and the potential difficulties of using it. 5
- (d) The behavioural issues surrounding benchmarking and performance management. 5

Answers should relate specifically to the scenario outlined.

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# 4

Hansford City Council is planning to introduce a congestion charge in order to restrict vehicle access to its historic city centre. Since powers were made available to councils under the Transport Act 2000 very few councils have taken the opportunity to make use of them.

Hansford is a large city but its central area contains buildings of historic interest and a market area dating from medieval times. Despite the availability of a bypass, an inner ring route and a number of car parks linked to the city centre by public transport, the amount of traffic using the city centre roads has increased to a level which is unacceptable and unsafe for pedestrians. This is the background against which the decision has been made.

The scheme itself will be small scale as the geography of the central area is such that there is only one, very narrow, road into it and one road out. This is already a one way system. The plan is to have one entry and one exit point. Entry will be through taking a ticket and exit will rely upon a payment having been made and the ticket being validated. Entry and exit will also be video monitored and a penalty system will be applied in respect of non payers.

The aims of the scheme are to improve safety and disability access in the centre and to improve the environment of the historic site. Whilst these were agreed as being important objectives there was some opposition to the scheme on the grounds of its cost and also from local traders who felt that they might suffer from fewer visitors leading to a loss of income.

Acceptance of the scheme was based on it covering costs and a political decision has been taken that it should pay for itself within five years. The target is to reduce road usage by 50%. The scheme will be subjected to a full scale review after five years.

The current traffic flow is 8,000 vehicles per day averaged over the year. The area is visited by up to 15,000 pedestrians each day. Traffic censuses carried out at different times throughout the year show that a charge of £1.50 would deter 10% of vehicles from using the road, and each additional 25p would increase that number by 5%. (These are absolute and not relative figures and relate to the current traffic flow figures).

The initial costs of the system including changes to the road system, signage, machines and computer software will be £35,000. Once the scheme is running the annual costs are estimated as being £6,000 which includes staff (proportionate equivalent) and maintenance costs plus variable costs of 30p per transaction.

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• **Requirement for question 4**

- (a) Calculate the charge required to meet the council's objectives of reducing road usage by 50%. Determine the charge at which the financial return on the scheme would be maximised. 9
- (b) On the basis of the charges identified above, will the scheme meet the requirement to pay for itself within five years? From the information which you have derived from your calculations what charge would you recommend? 4
- (c) Suggest how you might carry out the full scale scheme review at the end of five years. What additional information would you need to achieve this? What are the limitations on the use of the payback criterion? 4
- (d) How useful is the mathematical pricing model to organisations operating in the not for profit sector? 3
- (20)**
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# 5

Tastyfill makes pre-packaged sandwiches which are sold through supermarket outlets and motorway services. Management has recently carried out a strategic review which identified a number of important issues and determined a commitment to value management.

The main issues were mainly related to market developments. Analysis showed that:

- The overall sandwich market in the UK is increasing by about 7% per annum by value although it is around 10% by volume
- The market is moving away from basic sandwiches using white bread and traditional fillings and is moving towards more adventurous fillings and bread types including wraps
- New competitors are coming into the market and they are concentrating on wider ranges and/or lower prices

Tastyfill has built up a brand loyalty over the years and understands the importance of customers repeat purchasing on a routine basis.

The company is exploring two approaches to value management: functional analysis and customer profitability analysis.

The Management Accountant has carried out some preliminary research into these areas and has produced some information for further analysis and comment prior to reporting to a working group that is being set up to progress the matter. You are his assistant. He has sent you the following email:

To: Assistant Management Accountant  
From: Richard  
Cc: working group members

Subject Functional analysis/ customer profitability analysis

Hi,

I haven't made much progress so far because of last week's chutney crisis! I have managed to acquire some functional review information from one of our benchmarking partners. It's anonymised and incomplete as it stands

Function	Cost (£)	Value to customer (%)
1	4	12
2	3	10
3	4	8
4	3	6
5	9	24
6	11	40

Apparently the target cost was £30 (obviously the product was not sandwiches!).

What I want to know on this is how the information would be used. Then I need you to rack your brains to think about how we might apply the approach to our business. What would be the main steps, what information would we need and could we establish relevant functions for Tastyfill?

On the issue of customer profitability analysis I've got some basic data for you to work on. Our customers are quite straightforward as you know. We have three main supermarket chains and the two motorway services providers. I have given them the codes A-F and extracted figures for them.

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Customer code	Revenue (£m)	Costs (£m)
A	4.25	2.75
B	1.75	1.50
C	2.45	2.00
D	3.25	2.25
E	4.15	3.55
F	1.20	1.00

Could you analyse the relative profitability of the customers? I'd be interested in your comments too.

Perhaps you could put this in a Word document and attach to me by the end of the week.

Thanks Richard

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• **Requirement for question 5**

Produce a briefing note which responds to the requests made in the email. The report should cover the areas of:

- (a) Functional analysis. 14
- (b) Customer profitability analysis. 6

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