

**ACCOUNTING FOR DECISION MAKING**

**Diploma stage examination**

**3 June 2008**

**MARKING SCHEME**



**Question 1**

Syllabus D1, D2, D3 and D5 Study sessions 13 and 14

**Prepare a report for discussion with Sam and Tim on HMS' performance in 2007. In the report you should:**

- (a) **Using total asset values calculate ROI, the modified ROI using the Du Pont method and Residual Income for each of the centres for 2007. Determine how well each centre has achieved its financial targets. Discuss the position shown in your calculations. Appraise the methodology being used and assess the value of the data being used. Suggest changes which could be made to improve the current situation.**

The answer should be in the form of a report to the two managing directors of the company.

*1 mark is available for the use of an appropriate format and structure*

The report should contain sections to cover the following question requirements:

- Calculation of financial performance measures.
- Discussion of position.
- Appraisal of methodology.
- Suggestions for improvement.

**Calculation of financial performance measures**

**Net profit/ROI/RI**

	NW £	EA £	YS £	MW £	SB £
Course income	800,000	510,000	580,000	700,000	230,000
Variable costs (excluding course materials)	480,000	290,000	310,000	380,000	110,000
Fixed costs					
Local costs					
Staff	150,000	90,000	140,000	170,000	40,000
Administration	20,000	12,000	9,000	19,000	8,000
Premises	28,000	24,000	32,000	33,000	16,000
Centrally incurred costs					
Administration and management	28,000	17,000	20,000	24,000	11,000
Staff training and development	14,000	8,500	10,000	12,000	5,500
Training materials	42,000	25,500	30,000	36,000	16,500
Total costs	762,000	467,000	551,000	674,000	207,000
Net profit	38,000	43,000	29,000	26,000	23,000
Assets	222,000	155,000	146,000	140,000	123,000
ROI = Net profit/ Assets	17%	28%	20%	19%	19%
Du Pont Method					
Revenue/ investment (times)	3.6	3.3	4.0	5.0	1.9
Profit/ revenue (%)	4.8	8.4	5.0	3.7	10.0
RI (residual income)					
- based upon 12% return	11,360	24,400	11,480	9,200	8,240

*1 mark for net profit, 2 marks for ROI, 2 marks for Du Pont Method, 2 marks for RI up to a maximum of( 7)*

In addition to these measures HMS has set itself financial targets as follows:

- Annual sales to grow by 20% per annum.
- Administrative costs to reduce by 10% per annum.
- Contribution to be at least 40% of turnover.
- Return on investment of 12 % overall and for all centres.

Comparisons can be made between 2006 and 2007.

### Financial targets

	NW £	EA £	YS £	MW £	SB £
Turnover 2006	720,000	430,000	540,000	620,000	n/a
Turnover 2007	800,000	510,000	580,000	700,000	230,000
Growth in turnover	11%	19%	7%	13%	n/a
Admin costs 2006	43,000	25,000	28,000	38,000	n/a
Admin costs 2007	48,000	29,000	29,000	43,000	19,000
Reduction in admin costs	(11%)	16%	(4%)	(13%)	n/a
Contribution	278,000	194,500	240,000	284,000	103,500
% contribution	35%	38%	41%	41%	45%
Return on investment (from above)	17%	28%	20%	19%	19%

Contribution is calculated as course income minus variable costs minus course training materials costs.

*2 marks for turnover, 2 marks for admin costs, 2 marks for contribution up to a maximum of (6)*

*The data provided would allow other financial performance measures to be calculated, but there is no need. The requirements are quite clear and no marks will be awarded for other calculations, although relevant calculations based upon the overall position of the company would be acceptable*

The report should continue with a discussion of the position revealed by the calculations. This can be done in a number of ways, but marks will more readily be awarded for an analytical rather than a descriptive approach.

### ROI

The basic ROI calculations show a consistent return with three of the centres having a return of 19/20%. The variants from this are the North West centre which is lower than this at 17% and the East Anglia centre which has a much higher return of 28%. The Scottish Borders centre is difficult to comment upon, as it is a new enterprise. The North West centre return may be affected by the accounting arrangements in place (see later comments).

### **Du Pont**

When the Du Pont analysis is taken into account a fuller picture emerges. The Yorkshire Dales and Welsh centres appear from the simple ROI to be similar, but the Du Pont method shows that the Mid Wales centre is making the best use of its assets of any of the centres although its profit to turnover ratio is lower than the other centres. This centre also had the highest growth in administration costs from 2006 to 2007. The Du Pont analysis also shows that the East Anglia centre has been relatively successful in achieving a profit to turnover of 8.4% and, of course, this was the only centre to achieve its target for reduction of administration costs. The performance of the new centre is also worth commenting upon. As a new centre it is probably not operating at full capacity, hence the low turnover to assets ratio, but this is another centre which has a successful profit to turnover percentage.

### **RI**

All centres are achieving their minimum return of 12%, but the East Anglia centre is easily the most successful.

Overall the East Anglia centre is the most successful in terms of returns. Some students may realise that this is largely as a result of improvements made between 2006 and 2007 and that the 2006 performance was nothing like as impressive. This is worth giving credit for but, as mentioned above, it was not necessary to carry out a lot of calculations to establish this.

### **Financial targets**

None of the centres achieved the target growth figure in annual sales. Only East Anglia came close with an increase of 19%. East Anglia was also the only centre to achieve a reduction in administration costs. This may in part be attributable to East Anglia's poor performance in 2006. It is still not achieving its contribution target. Neither is the North West centre. The other centres, including the new centre in the Scottish Borders, are all operating at above the 40% target.

Where targets are consistently missed it is necessary to examine the reasons for this. This is certainly the case with the turnover and administration cost targets. It may be that they are unrealistic and that they should be reviewed in order to give the centres a real incentive in future years.

*Overall 6 marks for discussion of performance as revealed by the calculations*

*As a rough guide 3 marks can be given for discussion of the returns calculations and 3 marks for discussion of the financial targets, but it may be that answers do not fit neatly into this framework. Some discretion will have to be used in assessing this section.*

The final part of this section asks for an appraisal of the methodology and an assessment of the value of the data being used, with some suggestions for improving the situation.

**Points to make**

Financial performance measures should be related to the financial objectives of the company. To a large extent they do this. The main financial objectives of the company are to:

- Double turnover over the next five years.
- Reduce administrative costs and non core staffing.
- Achieve steady growth in profit and returns on investments.

Turnover is related to the key target of growth in annual sales of 20% per annum. It may be that this target is too high, given the performance being reported for 2007. A target of 20% growth per annum is not necessary to achieve a doubling of turnover in five years. In fact this target would lead to an increase of two and a half times over this period. This target needs to be reviewed.

The reduction in administration costs is a worthy aim, but it is not being achieved. Again this should be looked at, particularly as it is being set as a target at a time when the business is growing quite significantly. The growth in profit and returns is reflected in the use of the turnover and contribution targets and in the calculation of ROI etc. In this case the Du Pont method adds a useful dimension to the analysis as it allows for consideration of the use of assets and the conversion of sales into profits.

The data being used can be criticised. There is a problem in allocating costs from the centre. In particular the methods used for allocating the costs of training and development and training materials needs to be reviewed. Training materials are a variable cost of providing the courses and should be allocated on the basis of actual materials supplied. It can be argued that training and development of staff is a central cost (although local managers are responsible for recruitment and development) but turnover is not the best way of allocating this cost, nor the costs of central administration and management. Perhaps an activity based system could be developed which would give centres a cost allocation which more accurately reflected their use of the activities driving the costs.

There is also an issue with the North West centre which is not sufficiently separated from the headquarters as it shares the same building. North West may have become responsible for some of the central costs and it is still considered responsible for the asset value of the building. This needs to be reviewed and a more equitable system developed. Local managers should only be accountable for financial performance which is under their control.

*3 marks for discussion of methodology and 3 marks for discussion of data  
up to a maximum of (6)*

*Answers should look at both problems and solutions*

*(26)*

**(b) Include three suitable non-financial performance indicators based on 2007 data for each of the centres. Comment upon each of these and explain their significance in relation to the company's objectives.**

The answer to this section should be incorporated into the same report which has been prepared for section (a) above.

The non-financial performance indicators are largely suggested by the data provided, especially as the question requires that calculations are provided of the chosen indicators. A starting off point is to re-examine the company objectives, ignoring the financial objectives which have already been considered.

- Open a new centre every year over the next five years.
- Develop human resources to create self sufficiency in core staffing requirements.
- Treat staff fairly and at all times respect their dignity as human beings and their rights as employees.
- Sustain quality of management development courses to match and surpass the expectations of customers.
- Operate the business in an ethical and environmentally sustainable way.

This suggests a number of possible areas:

- Staff turnover.
- Customer satisfaction ratings.
- Complaints/ refunds as a proportion of total customers.

There is also data on occupation of premises. Other indicators could be used although data would be required: e.g. staff satisfaction could be measured by survey, and there are also ethical/environmental indicators that could be devised (see answer to part c).

It would also be useful to compare these indicators from one year to the next.

*1 mark for each indicator identified with 1 mark for comment and explanation of significance, subject to an overall maximum of (6)*

**Tim has asked you about sustainability reporting. In a separate briefing provided for him you should:**

**(c) Explain the purpose of a sustainability report. Outline the steps that would need to be taken in developing a report and provide two examples of performance indicators that could be used.**

Sustainability is defined as " a state in which activities provide a good quality of life for all through a just and healthy society without jeopardising the environmental system that enables our survival" - CIPFA as quoted in learning materials.

The pursuit of sustainability is in line with goals set by the UK government. In order to contribute to the achievement of those goals organisations must put arrangements in place for managers to achieve the goals (planning) and to monitor whether the goals are being achieved (control). This provides the need for a sustainability report, the purpose of which is to report on the actions planned by the organisation to achieve sustainability and the progress that has been made.

*2 marks for explanation of purpose*

The first step would be to identify what needs to be measured, keeping the list short and concise but focused on the goals of sustainability.

The second step would be to design a measure for each key area of performance. Where possible existing measures should be used, or measures could be taken from published sources such as those suggested by the Global Reporting Initiative (GRI). Alternatively local measures may be used, but this would restrict the scope for comparisons or for benchmarking against other organisations.

*Up to 2 marks for each step in the process up to a maximum of (4)*

Examples should be provided. In the case of HMS this could include indicators on the use of carbon based fuels, land use and conservation, the use of paper from sustainable sources, the recycling of materials etc.

*1 marks for each relevant example up to a maximum of (2)*

*(8)*

**(40)**

**Question 2**

Syllabus A2 and A3 Study Units 2, 3, 4 and 5

- (a) Calculate the Net Present Value (NPV) of the two options under consideration, using the rate of 6% as required by the council. Discuss the choice of 6% as the discount rate.

**Option 1**

	Year 0 £	Year 1 £	Year 2 £	Year 3 £	Year 4 £	Year 5 £
Development costs	-65,000					
Licence		-5,000	-5,000	-5,000	-5,000	-5,000
Marketing costs		-18,000	-10,000	-10,000	-10,000	-10,000
Systems admin.		-10,000	-10,000	-10,000	-10,000	-10,000
Cash benefits		45,000	45,000	45,000	45,000	45,000
Net cash flow	-65,000	12,000	20,000	20,000	20,000	20,000
PV factor – 6%	1.000	0.9434	0.8900	0.8396	0.7921	0.7473
PV @ 6%	-65,000	11,321	17,800	16,792	15,842	14,945

Net Present Value = £11,700

**Option 2**

	Year 0 £	Year 1 £	Year 2 £	Year 3 £	Year 4 £	Year 5 £
Development costs	-70,000					
New hardware	-35,000					
Licences		-8,000	-8,000	-8,000	-8,000	-8,000
Marketing costs		-40,000	-40,000	-10,000	-10,000	-10,000
Savings		20,000	20,000	20,000	20,000	20,000
Cash benefits		22,500	36,000	45,000	45,000	45,000
Net cash flow	-105,000	-5,500	8,000	47,000	47,000	47,000
PV factor – 6%	1.000	0.9434	0.8900	0.8396	0.7921	0.7473
PV @ 6%	-105,000	-5,189	7,120	39,462	37,228	35,121

Net Present Value = £8,743

*3 marks for each option up to a maximum of 6*

The options have been discounted at 6% because that is the rate specified by the council. It is also the rate specified by the Treasury as TDC prior to the current rate. Local authorities may use alternative rates where they are making use of borrowing from capital markets, in which case they could use the actual or marginal cost of borrowing. They can also use an alternative where they have been set a specific target for the return on their investment. This does not seem to apply in this example.



The argument in this case is that the 6% rate takes into account “the effects of inflation, risk and the cost of borrowing”. The final point is valid here, but the other points are not or may not be. As the estimates of cash flows do not include inflation there is no need to use a discount rate that incorporates inflation. As far as risk is concerned it is not clear how this rate would be more appropriate than the TDC.

*1 mark for each valid point up to a maximum of (2)*

**(b) Explain the basis of the Treasury Test Discount Rate (TDR) and assess how well it deals with:**

- i. Risk;**
- ii. Inflation.**

The Treasury Test Discount Rate is currently set at 3.5%. It is equivalent to the social time preference rate, where social time preference is defined by the Treasury as the value that society attaches to present, as opposed to future, consumption. As individuals prefer present consumption to the use of resources to create future benefits there is a need for them to be discounted. This is criticised on the basis that people may not value fully the benefits of future consumption. It is, however, felt that this is more relevant than using a rate that relates to the costs of capital or to financial returns on investments, as public sector organisations do not have as one of their objectives the generation of commercial profit.

*2 marks for explanation*

**Risk**

An alternative to a rate based upon social time preference would be a rate based upon social opportunity cost and it is generally assumed that the opportunity cost would be related to potential returns available to the private sector (See Jones and Pendlebury). These rates would incorporate an allowance for risk, but this would be business and financial risk to which the private sector is exposed. This is clearly not the case with the TDR. The question then is, should the attitude to risk be different in the public and private sector? The risks are different, but riskiness exists in both sectors. Jones and Pendlebury go on to make further points which would be relevant to this discussion. Where risk is felt to be a significant issue, then an alternative rate should be used (or a method such as the use of certainty equivalents).

*2 marks for discussion*

**Inflation**

The TDR is set by the Treasury to exclude the effect of inflation. It is a real rate of return that eliminates inflation from calculations. This is useful in allowing all estimates to be made at present price levels, but does not deal with differential inflation. Where a significant level of differentiation is expected the TDR would have to be adjusted to take this into account

*2 marks for discussion*

- (c) **Determine the effects of re-calculating the NPV of the two options using the present Treasury TDR and discuss the implications of your result.**

The NPVs should be recalculated using 3.5%.

**Option 1**

Net cash flow	-65,000	12,000	20,000	20,000	20,000	20,000
PV factor – 3.5%	1.000	0.9662	0.9335	0.9019	0.8714	0.8420
PV @ 3.5%	-65,000	11,594	18,670	18,038	17,428	16,840

Net present Value = £17,572

**Option 2**

Net cash flow	-105,000	-5,500	8,000	47,000	47,000	47,000
PV factor – 3.5%	1.000	0.9662	0.9335	0.9019	0.8714	0.8420
PV @ 3.5%	-105,000	-5,314	7,468	42,389	40,956	39,574

Net present Value = £20,075

*2 marks for each calculation up to a maximum of (4)*

The calculations show that both options have a positive net present value at both 3.5% and 6%. At 6% the NPV of Option 1 is higher than Option 2, but this position is reversed at 3.5%. This is largely a reflection of the structure of costs and benefits over the five year investment appraisal period. Option 1 has lower initial development costs and a constant level of cash benefits. Option 2 has higher initial costs but also has higher cash benefits, although these are not fully realisable until year 3 onwards. The reasons given for using 6% are not really very clear (as commented upon in part a). Unless these reasons can be clarified and justified it might be prudent to base a decision on the 3.5% discount rate. In practice, of course, there are other factors which could/should be taken into account, and both options appear to be financially viable.

*2 marks for discussion*

**(20)**

**Question 3**

Syllabus C1 Study Unit 10, 12

- (a) Calculate the price that Heathymeals should charge based upon the Maximax, Maximin and Minimax regret approaches to risk. Explain each approach.

This question is best answered using a payoff table. The decision on pricing should take into account contribution. Answers that are based upon income only should be given no credit.

State	£5.50 per meal	£6.00 per meal	£6.50 per meal
Pessimistic	$(5.50 - 4.00) \times 210,000 = \underline{315,000}$	$(6.00 - 4.00) \times 180,000 = \underline{360,000}$	$(6.50 - 4.00) \times 150,000 = \underline{375,000}$
Neutral	$(5.50 - 4.00) \times 235,000 = \underline{352,500}$	$(6.00 - 4.00) \times 195,000 = \underline{390,000}$	$(6.50 - 4.00) \times 155,000 = \underline{387,500}$
Optimistic	$(5.50 - 4.00) \times 260,000 = \underline{390,000}$	$(6.00 - 4.00) \times 205,000 = \underline{410,000}$	$(6.50 - 4.00) \times 160,000 = \underline{400,000}$

**Maximax**

This is the approach taken by a risk taker and will be the option which gives the best possible outcome. This would be a price of £6.00 which optimistically gives a contribution of £410,000 – compared with the net fixed costs of £360,000 (£400,000 - £40,000), a surplus of £50,000.

*1 mark for price plus 1 mark for explanation up to a maximum of (2)*

**Maximin**

This approach would be taken by a risk averter who would identify the worst possible outcome for each decision and then take the best of the worst. In this example the worst outcomes are all based upon the pessimistic state, with the best of these deriving from a price of £6.50. This gives a contribution of £375,000 and a surplus of £15,000 over net fixed costs.

*1 mark for price plus 1 mark for explanation up to a maximum of (2)*

**Minimax regret**

This approach is based upon the opportunity cost (regret) in pursuing each option. It involves calculating the maximum regret from each course of action and then selecting the option which would give the minimum regret. To calculate this a regret table should be constructed.

State	£5.50 per meal £	£6.00 per meal £	£6.50 per meal £
Pessimistic	60,000	15,000	0
Neutral	37,500	0	2,500
Optimistic	20,000	0	10,000
Maximum regret	80,000	15,000	10,000

The price which minimises regret is £6.50. This would be the course of action advocated by the regret averse decision maker.

*1 mark for price plus 1 mark for explanation up to a maximum of (2)*

*(6)*

**(b) Calculate the Expected Value of each price level and compare this with the approaches used in part (a). Explain what Expected Value means.**

£5.50			£6.00			£6.50		
Contrib. £	Prob.	EV	Contrib. £	Prob.	EV	Contrib. £	Prob.	EV
315,000	0.3	94,500	360,000	0.3	108,000	375,000	0.3	112,500
352,500	0.4	141,000	390,000	0.4	156,000	387,500	0.4	155,000
390,000	0.3	117,000	410,000	0.3	123,000	400,000	0.3	120,000
EV		352,500	EV		387,000	EV		387,500

The expected values of the three options are shown in the table above. The price of **£6.50** per meal has the highest expected value, £387,500, compared with the next best option which is the price of £6.00 per meal. However, the difference between the two options is slight.

Expected value is the approach that would be taken by the risk neutral decision maker. It is an average value and would not necessarily be one of the possible outcomes. Although £6.50 gives the highest expected value there appears to be a 70% chance that the price of £6.00 would provide a higher contribution.

The approaches used in part (a) provide conflicting results. Two of three approaches suggest a price of £6.50 (maximin and minimax regret) whilst only the maximax approach leads to a price of £6.00. The decision would appear to lie between these two options and will depend upon the decision maker's attitude to risk. It is worth bearing in mind that the analysis will only be as good as the data being used and a lot depends upon the accuracy of the risk assessment (and the financial forecasts).

*4 marks for calculation of expected value, 2 marks for discussion of result and comparison with the other approaches and 1 mark for explanation of expected value up to an overall maximum of (7)*

**(c) Explain what is meant by Perfect Information. Assess the value of perfect information in the scenario described above.**

Perfect information would be risk free information relating to the future which could be accepted with a probability of 100%. In theory it should be possible to improve the quality and reliability of information through using better methods of forecasting but, of course, this improvement can only come at a cost.

It is possible to assess the value of perfect information, i.e. how much would it be worth to an organisation to have perfect information upon which to base its decision making. However, it is not possible actually to have perfect information. The future will always carry an amount of risk and uncertainty about it which will make this unattainable. The benefit of assessing the value of perfect information is to put this into context and calculate for an organisation the maximum amount that they should spend in the pursuit of this perfection.

This can be worked out in the following table:

State	Probability	Decision	Contribution £	Expected value £
Pessimistic	0.3	6.50	375,000	112,500
Neutral	0.4	6.00	390,000	156,000
Optimistic	0.3	6.00	410,000	123,000
				391,500

The expected value with information is £391,500. The expected value without information is £387,500. The value of information is the difference which is £4,000.

*2 marks for explaining perfect information and how it can be used,  
2 marks for calculation up to an overall maximum of (4)*

**(d) The terms risk and uncertainty are often used interchangeably. Explain what each term means and demonstrate the distinction between them using the Healthymeals scenario.**

Risk is used where there are a number of outcomes which can be applied to a situation, and where those outcomes can be assigned probabilities based upon a statistical evidence base or on rational assumptions. 1

Uncertainty refers to possible outcomes that could arise but that are not predictable. This unpredictability may refer to the outcome itself and/or to the probability of its occurrence. 1

Risk is here exemplified by the assessment of likely demand at different price levels and the assignment of probability to those figures. Uncertainty would relate to events such as hospital closure, business failure or closure on health and safety grounds. 1

*(3)*

**(20)**

**Question 4**

Syllabus C1 Study Units 1, 2, 10 and 12

- (a) **Explain what is meant by the Public Sector Comparator (PSC). Calculate the PSC for the secondary schools project and present it in a format which will allow for a value for money comparison with the annual consortium unitary payment.**

**Public Sector Comparator (PSC)**

The Public Sector Comparator (PSC) is an investment appraisal based upon a conventional approach to the financing of a public sector capital investment. The aim is to calculate a Net Present Value (NPV) figure that can be used to compare with the NPV from using PFI financing. This is done in order to provide a test of value for money for the PFI project. Where the assumptions on the timings of the two approaches differ it may be necessary to calculate an Equivalent Annual Cost (EAC).

	0 £m	1 £m	2 £m	3-42 £m	42 £m
Land/ residual value	(1.80)				1.80
Design and build payments	(12.00)	(12.00)	(12.00)		
Sale of land and buildings		8.00			
Maintenance and repairs				(0.05)	
Facilities management				(0.18)	
Net Cash Flow	(13.80)	(4.00)	(12.00)	(0.23)	1.80
PV factor	1.0000	0.9662	0.9335	19.9352	0.2358
Present value	(13.80)	(3.86)	(11.20)	(4.59)	0.42

Net Present Value = £ (33.03)m

EAC = £(1.51)m

The EAC can be compared with the annual unitary payment of £1.80m.

*2 marks for explanation of PSC, 3 marks for cash flow figures, 1 mark for NPV,  
1 mark for EAC and 1 mark for comparison with unitary payment  
up to an overall maximum of (8)*

**(b) Explain the importance of taking risk into account in the final decision and explain the problems inherent in doing so.**

One of the most important benefits claimed for PFI is the transference of significant risks from the public to the private sector. This may result in a cost saving for the public sector. The PSC does not take this into account and this may result in the true cost being understated in comparison to the annual PFI payment figure.

Ideally the cost of the risk transferred should be quantified and added to the PSC figure. There may be risks associated with the design and build payments, operating costs, completion dates and residual values. The problem lies in quantifying these risks in terms of both their likelihood and their impact. There is unlikely to be a lot of past data that can be called upon to assist with this. The outcome of any calculations would only be as valuable as the accuracy of the estimates and probabilities used.

*2 marks for explanation of importance of risk, 2 marks for problems of taking risk into account up to a maximum of (4)*

**(c) Explain what is meant by Optimism Bias. Use the figures provided to recalculate the PSC and discuss your findings.**

Managers are believed to take an optimistic view of large capital projects for which they are responsible. This may lead them to understate costs and overstate potential benefits. This gives rise to Optimism Bias. One way of overcoming this would be to adjust the figures used in the PSC and this is advocated by the Treasury in the Green Book. The Treasury also provides data for making the adjustment which can be used if the organisation has no data of its own. This is based upon a report prepared by Mott MacDonald which identifies the average levels of optimism bias for conventionally procured (as opposed to PFI) projects.

*Up to 3 marks for explanation of optimism bias to include Treasury advice and Mott MacDonald report*

The optimism bias adjustment can be made to the design and build payments and the operational costs. The revised calculation is as follows

	0 £m	1 £m	2 £m	3-42 £m	42 £m
Land/ residual value	(1.80)				1.80
Design and build payments	(17.64)	(17.64)	(17.64)		
Sale of land and buildings		8.00			
Maintenance and repairs				(0.0705)	
Facilities management				(0.2538)	
Net Cash Flow	(19.44)	(9.64)	(17.64)	(0.32)	1.80
PV factor	1.0000	0.9662	0.9335	19.9352	0.2358
Present value	(19.44)	(9.31)	(16.47)	(6.46)	0.42

Net Present Value = £(51.26)m

EAC = £(2.35)m

The EAC is now greater than the PFI annual payment of £1.80m. The adjustment for risk suggests that the PFI approach offers better value for money than the traditional method of procurement. It must be borne in mind that the adjustments have been made on the basis of average figures; however, the margin of difference is such that there appears to be a real advantage in using PFI.

*2 marks for adjusted cash figures, 1 mark for NPV and 1 mark for EAC, plus  
1 mark for comments on result, up to a maximum of (5)*

*(8)*

**(20)**



**Question 5**

Syllabus E2, E3 Study Units 16, 17

- (a) **Explain the concepts of Lean Enterprise and Business Excellence, stating the main elements that make up each of the concepts, and comparing them.**

The aim in answering this question is to identify exactly what these important concepts involve and what the key elements of each concept are. There should be some recognition, in comparing them, that there are areas of commonality between them. It is important that answers show a level of understanding beyond simple reiteration of the learning materials. In particular there is a lot of detailed material on the business excellence model in study session 15 which is not directly what is wanted by this question.

**Lean Enterprise**

The aim of lean enterprise is to manage an organisation so that it achieves its objectives at minimum cost. It is underpinned by the philosophy and principles of lean operations. The basic elements of this are:

- Elimination of all waste. Waste is defined as any activity that does not add value to the organisation and contribute to its achievement of objectives.
- Involvement of everyone within the organisation so that the lean philosophy is embraced by everyone and in every process used.
- Continuous improvement (kaizen), the idea that the aim of perfect quality and total elimination of waste must be a constant goal.

The achievement of these depends upon the pursuit of quality but also relies upon the importance of cost management and, in turn, the two essential aspects of cost control and cost reduction.

*1 mark per point up to a maximum of (4)*

**Business Excellence**

A business excellence culture is aimed at achieving an efficient and effective organisation which is qualitatively superior to competitors and error free. Central to this approach is a structure of performance management based upon the business excellence model which concentrates upon nine aspects of the organisation's business performance (five of which focus on how the organisation works, "enablers", and four which concentrate upon what success has been achieved, "results").

Two important techniques that are used to achieve business excellence are:

- Total quality management (TQM).
- Just in Time (JIT).

TQM is a continual process of improvement in quality, productivity and effectiveness. It involves the whole organisation in seeking to achieve these goals.

JIT involves the use of customer driven operations to improve quality, reduce set up times and increase flexibility of production. It is based upon the elimination of non value added activities such as inventory holding, waste, defects, breakdowns etc.

*1 mark per point up to a maximum of (4)*

### **Comparison**

The important point is that after comparisons there would appear to be a lot in common between these two approaches. They are both:

- Quality driven.
- Concerned with elimination of waste and inefficiency.
- Pursuing continuous improvement.
- Involved in changing organisational cultures to achieve these aims.

*1 mark per point subject to a maximum of (2)*

*(10)*

### **(b) Discuss the management accounting implications of each of the approaches.**

The management accounting implications are mainly concerned with cost reduction and cost control. Cost reduction will involve identifying the cost of activities that are not adding value and costing the implications of operating in different ways, e.g. through changing work methods to improve labour productivity, and improving materials usage by reducing waste, using better quality materials and using new equipment and work methods. This should be done in a planned and positive way. Cost control can be applied through the use of techniques such as budgeting (including activity based budgeting), standard costing and performance measurement systems. Contributions can also be made through inventory management and investment appraisal. The management accountant can contribute through the provision of information at all levels in the management process, from strategic planning to operations and control.

*There is a lot of potential for discussion here. Answers may take different approaches. A general guide to make should be 1 mark for each relevant point subject to a maximum of (4)*

**(c) Assess the value of each approach to the public sector and demonstrate, through the use of examples, their actual or potential usage.**

Both of these approaches can undoubtedly be applied within the public sector.

The application of lean enterprise to the public sector could be quite straightforward. Public funds are limited so it is important for public service organisations to achieve their objectives at the minimum cost. In the public sector an existing organisation can be re-engineered to create a lean organisation. Similarly business excellence can also be used and techniques such as TQM and JIT applied.

Examples may be given of the use or partial use of the approaches and/or of the techniques associated with these approaches. Examples could relate to the introduction of cost reduction and cost control systems, quality management, performance management and/or to specific action in relation to on time delivery of services, elimination of waste, inefficiency and breakdowns, reduction or elimination of stocks, redesign of operations, elimination of non value added activities etc.

*2 marks for assessment of the value of approaches to public sector plus 4 marks for discussion of actual or potential examples of usage up to an overall maximum of (6)*

**(20)**