

General Comments

Performance on this paper was better than in previous sittings mainly as a result of improved performance in Sections A and B. Candidates scored better on average in the multiple choice questions than in previous diets and Question 1 as a whole was fairly well done. Question 2 was well done overall but 2(a) and 2(e) were particularly badly answered. Candidates are once again reminded that all questions on the P1 paper are compulsory and that consequently they need to study all areas of the syllabus. Candidates cannot rely on passing the exam based on their performance in computational questions.

Question 3 was better done than in the May 2011 sitting however a significant number of candidates still failed to achieve a pass in this question. Performance could have been significantly improved if candidates had worked through previous exam questions. 3(a) clearly revealed some knowledge gaps with many candidates not knowing how to calculate these variances. Much more work needs to be done by candidates and tutors in this area.

The problem with candidates not reading the questions properly was highlighted in Question 3(c) where some candidates tried to produce the variances for chairs, sideboards and tables, which given the size of the task they soon abandoned after only one or two calculations. Candidates need to read the requirements more carefully to avoid wasting examination time.

Candidates are also ignoring the advice regarding verbs and their meanings. In Question 3(d) and question 2(b) answers were far too brief. Just writing the word 'size' or 'control' is not enough where the question asks the candidate to explain. Many candidates missed out on marks where they clearly knew the points but had provided no explanation.

Question 4 was reasonably well done but while candidates performed well in the narrative parts, some elements of the calculations are still causing problems. Basic techniques such as payback are also causing surprising difficulties. Some candidates decided to calculate a discounted payback period, presumably because this was asked for in the May 2011 sitting. Candidates must read the requirements carefully. Candidates also need to apply some common sense when answering questions. The word 'advise' in the question prompted many candidates to set out their answer as a letter/memo (some of which were a couple of pages long!). This was not asked for and it was a waste of time to use an elaborate answer format when only a simple paragraph describing the investment decision was needed.

The overall performance of candidates was encouraging although there are still some areas that are very weak. Every narrative question that has been set in budgeting has been particularly badly answered. Some candidates are still unable to calculate even the basic variances and are relying on rote learning. The result is that they are unable to explain what it is they are calculating and why the calculation provides useful information.

Too many candidates are still making careless arithmetic errors and producing poor work which would be completely unacceptable from a management accountant in business.

Section A – 20 marks
ANSWER ALL EIGHT SUB-QUESTIONS IN THIS SECTION

Question 1.1

Which of the following would **never** be considered a feature of factoring?

- A** The factoring company charges a fee for its services.
- B** Interest is charged on the amount advanced to the client from the date of the advance until the debt is settled by the client's customer.
- C** The factoring company advances a percentage of the invoice value immediately, with the remainder being paid when the client's customer settles the debt.
- D** The borrowing is repayable over a number of years.

(2 marks)

The correct answer is **D**

Question 1.2

A marketing manager is trying to decide which of four potential selling prices to charge for a new product. The state of the economy is uncertain and may show signs of recession, growth or boom. The manager has prepared a regret matrix showing the regret for each of the possible outcomes depending on the decision made.

	Regret Matrix			
State of the economy	Selling price			
	\$40	\$45	\$50	\$55
Boom	\$10,000	\$0	\$20,000	\$30,000
Growth	\$20,000	\$10,000	\$0	\$20,000
Recession	\$0	\$10,000	\$20,000	\$30,000

If the manager applies the **minimax regret criterion** to make decisions, which selling price would be chosen?

- A** \$40
- B** \$45
- C** \$50
- D** \$55

(2 marks)

The correct answer is **B**

Workings

The maximum regret at a selling price of \$40 is \$20,000
The maximum regret at a selling price of \$45 is \$10,000
The maximum regret at a selling price of \$50 is \$20,000
The maximum regret at a selling price of \$55 is \$30,000

Therefore if the manager wants to minimise the maximum regret, a selling price of \$45 will be selected.

Question 1.3

A decision maker that makes decisions using the minimax regret criterion would be classified as:

- A** Risk averse
- B** Risk seeking
- C** Risk neutral
- D** Risk spreading

(2 marks)

The correct answer is **A**

Question 1.4

A company is offering its customers the choice of a cash discount of 3% for payment within 15 days of the invoice date or paying in full within 45 days.

The effective annual interest rate of the cash discount is:

- A** 43.3%
- B** 12.5%
- C** 44.9%
- D** 24.7%

(2 marks)

The correct answer is **C**

Workings

Payment will be made 30 days early.

Number of compounding periods = $365/30 = 12.167$

$$1 + r = \left(\frac{1.00}{0.97} \right)^{12.167}$$

$$1 + r = 1.4486$$

The effective annual cost of the cash discount is 44.9%

Question 1.5

AB's estimated trade receivables outstanding at the end of this year are the equivalent of 60 days' credit sales. Credit sales for this year are projected to be \$682,000. AB is preparing the budget for next year and estimates that credit sales will increase by 15%.

The trade receivables amount, in \$, outstanding at the end of next year is anticipated to be the same as at the end of this year.

The budgeted trade receivable days at the end of next year, to the nearest day, will be:

- A 52 days
- B 69 days
- C 51 days
- D 60 days

(2 marks)

The correct answer is **A**

Workings

$$[\$682,000/365] \times 60 = \$112,110$$

$$[\$112,110 / (682,000 \times 1.15)] \times 365 = 52.17 \text{ days}$$

Question 1.6

PJ has budgeted sales for the next two years of 144,000 units per annum spread evenly throughout each year. The estimated closing inventory at the end of this year is 6,500 units. PJ wants to change its inventory policy so that it holds inventory equivalent to one month's sales. The change in inventory policy will take place at the beginning of next year and will apply for the next two years.

Each unit produced requires 2 hours of direct labour. The budgeted direct labour rate per hour is \$15. It is anticipated that 80% of production will be paid at the budgeted rate and the remainder will be paid at the overtime rate of time and a half. PJ treats overtime costs as part of direct labour costs.

Required:

Calculate the direct labour cost budget for the next year.

(3 marks)

Workings

Budgeted sales	144,000	units
Plus Closing inventory	12,000	units
Less Opening Inventory	<u>(6,500)</u>	units
Budgeted Production	<u>149,500</u>	units

149,500 x 2 hours per unit = 299,000 hours
 80% x 299,000 = 239,200 hours x \$15 = \$3,588,000
 20% x 299,000 = 59,800 hours x \$(15 x 1.5) = 1,345,500

Total labour cost budget = \$4,933,500

Question 1.7

An investor is considering purchasing a bond with a par value of \$100 and a coupon rate of 8% payable annually. The bond is redeemable at par in 6 years' time. Bonds with the same level of risk have a yield to maturity of 7%.

Required:

Calculate the price the investor should pay for the bond if the first interest payment will be paid one year after the date of purchase.

(3 marks)

Workings

Year(s)	Description	Cash flow	Discount Factor (7%)	Present Value
1-6	Interest	8	4.767	38.14
6	Redemption	100	0.666	66.60
PV				104.74

The investor should pay \$104.74.

Question 1.8

FP can choose from three mutually exclusive projects. The net cash flows from the projects will depend on market demand. All of the projects will last for only one year. The forecast net cash flows and their associated probabilities are given below:

Market demand Probability	Weak 0.30	Average 0.50	Good 0.20
Project A	\$000 400	\$000 500	\$000 600
Project B	300	350	400
Project C	500	450	650

Required:

- (i) **Calculate** the expected value of the net cash flows from each of the THREE projects.
- (ii) **Calculate** the value of perfect information regarding market demand.

(4 marks)

Workings

- (i) Expected values (\$000)

Project A $(\$400 \times 0.3) + (\$500 \times 0.5) + (\$600 \times 0.2) = \490

Project B $(\$300 \times 0.3) + (\$350 \times 0.5) + (\$400 \times 0.2) = \345

Project C $(\$500 \times 0.3) + (\$450 \times 0.5) + (\$650 \times 0.2) = \505

- (ii) Value of perfect information (\$000)

If weak select Project C = $(\$500 \times 0.3) = \150

If average select Project A = $(\$500 \times 0.5) = \250

If good select Project C = $(\$650 \times 0.2) = \130

Value of perfect information is $(\$530 - \$505) = \$25$

Section B – 30 marks

ANSWER ALL SIX SUB-QUESTIONS. YOU SHOULD SHOW YOUR WORKINGS AS MARKS ARE AVAILABLE FOR THE METHOD YOU USE

Question 2(a)	
<p>Explain the advantages of management participation in budget setting and the potential problems that may arise in the use of the resulting budget as a control mechanism.</p> <p style="text-align: right;"><i>(5 marks)</i></p>	
Rationale	
<p>The question assesses learning outcome B1(b) <i>explain the purposes of budgeting, including planning, communication, co-ordination, motivation, authorisation, control and evaluation, and how these many conflict</i>. It examines candidates' ability to explain the behavioural consequences of budgeting and the difficulties and conflicts that can arise.</p>	
Suggested Approach	
<p>Candidates should first consider the benefits of management participation in terms of motivation, optimisation of performance and reducing the information asymmetry gap. They should then consider the use of the budget for planning and control purposes and the need for realistically achievable targets. The potential problems of management participation should then be considered and the conflicts that can arise between management participation and the use of the budget as a control mechanism.</p>	
Marking Guide	Marks
<ul style="list-style-type: none"> • Explanation of use of budgets to motivate managers and optimise their performance • Explanation of use of budget as a control mechanism • Explanation of benefits of participative budgeting • Explanation of potential problems of participative budgeting 	<p>1 mark per valid point</p>
Maximum marks awarded	5 marks
Examiner's comments	
<p>This question was badly done by the majority of candidates with most scoring only one or two marks. Many candidates did not mention management participation in budget setting at all. Other candidates scored marks for motivation and control as background information but then went into discussions of things like incremental and rolling budgets which were not relevant to the question. Candidates who did discuss management participation often concluded that this would motivate the managers, would result in an accurate budget due to their knowledge of the business and discussed budgetary slack as a disadvantage as the main points. However most struggled to expand these points sufficiently to obtain full marks. Generally most candidates did not make enough valid points to achieve full marks.</p> <p><i>Common errors</i></p> <ol style="list-style-type: none"> 1. Failure to answer the question. 2. Lack of explanation of the points made. 3. Assuming 'management' referred to the senior management of the company and then discussing 'top-down' budgeting. 	

Question 2(b)	
<p>Explain the advantages AND disadvantages of an overdraft as a method of short-term finance for a company.</p> <p style="text-align: right;"><i>(5 marks)</i></p>	
Rationale	
<p>The question assesses learning outcome E2(a) <i>identify sources of short-term funding</i>. It examines candidates' ability to discuss the advantages and disadvantages of an overdraft as a method of short term finance.</p>	
Suggested Approach	
<p>Candidates should firstly consider the potential benefits to a company of using an overdraft and then contrast with the potential disadvantages that can arise from its use.</p>	
Marking Guide	Marks
Advantages	1 mark per valid point
<ul style="list-style-type: none"> • Flexibility • Minimal documentation • Interest charged only on amount outstanding 	Up to 3 marks for advantages / disadvantages
Disadvantages	
<ul style="list-style-type: none"> • Repayable on demand • Cost determined by risk • Security normally required • More expensive than loan finance 	
Maximum marks awarded	5 marks
Examiner's comments	
<p>This was answered reasonably well but often the answers were in bullet point form with very little detail, in most cases restricting the marks awarded because the points were not explained. Generally candidates knew that interest only had to be paid on the amount of the overdraft used, that it was easy to obtain (although usually put only as a bullet and not explained), was flexible (again sometimes not explained), incurred high interest charges and was repayable on demand.</p> <p><i>Common errors</i></p> <ol style="list-style-type: none"> 1. Not explaining the points made. 2. Discussing the use of an overdraft as a long-term method of financing despite the fact that the question clearly referred to short-term finance. 	

Question 2(c)

Demonstrate, using a decision tree, whether the company should develop an overseas market for its products.

(5 marks)

Rationale

The question assesses learning outcome D1(f) *apply decision trees*. It examines candidates' ability to use decision trees to evaluate a decision where there is uncertainty regarding expected cash flows.

Suggested Approach

Candidates should firstly draw the decision tree and then using the various profit levels for each branch of the tree work back to calculate the expected profit/loss at each node. They should then clearly indicate the most profitable decision.

Marking Guide

Marks

Decision tree	1 mark
Figures (½ mark each)	3 marks
Decision	1 mark

Maximum marks awarded

5 marks

Examiner's comments

This was reasonably well done with most candidates achieving a pass mark. Many candidates failed to draw the decision tree correctly as they assumed that the decision was whether the market development was a failure or a success. The result of this was that the \$250,000 development costs were then split 70% to the succeed branch and 30% to the fail branch. Some candidates thought that even if you decided not to develop you would still incur part of the \$250,000 fees. Candidates that scored poorly did so because they tried to deduct the costs of \$250,000 from every branch after allowing for the probability of the revenues (but not allowing for the probability of the \$250,000 as well) so the costs ended up being very large.

Common errors

1. Failure to show the 'develop / don't develop' decision on the tree.
2. Treating the \$250,000 development costs incorrectly.
3. Failure to state the final decision.

Question 2(d)	
Demonstrate , by calculation, which of the two vans should be purchased.	<i>(5 marks)</i>
Rationale	
The question assesses learning outcome C1(g) <i>prepare decision support information for management, integrating financial and non-financial considerations</i> . It examines candidates' ability to compare two alternative investments that have unequal lives.	
Suggested Approach	
Candidates should firstly calculate the discounted cash flows for both van A and van B. They should then divide the present value of the cash flow by the cumulative discount factor for 4 years and 5 years respectively. The selection of the van should then be based on the lowest annualised equivalent cost.	
Marking Guide	Marks
Use of correct discount factors	1 mark
Calculation of present values	1 mark
Use of correct cumulative discount factors	1 mark
Calculation of annualised equivalent cost	1 mark
Correct decision	1 mark
Maximum marks awarded	5 marks
Examiner's comments	
This was reasonably well done although a large proportion of candidates still thought that it was enough to calculate the present value of each option and select the option with the lowest costs. This was despite the fact that a similar question was in the May exam paper. Some candidates recognised a need to annualise the costs but simply divided by 4 years and 5 years (or sometimes 5 and 6 years). Some identified the correct cumulative discount factors but multiplied instead of dividing. Some candidates then selected van B as the figure was larger without realising that they were reviewing costs and not profits.	
<i>Common errors</i>	
<ol style="list-style-type: none"> 1. Failure to calculate an annualised equivalent cost. 2. Dividing the present value by 4 or 5 years. 3. Multiplying rather than dividing the present value by the cumulative discount factor. 4. Adding 1 to the cumulative discount factor. 5. Selecting van B which had the largest annualised equivalent cost. 	

Question 2(e)	
<p>Explain what is meant by each of the TWO types of risk listed above. Your answer should include an example of each type of risk.</p> <p style="text-align: right;"><i>(5 marks)</i></p>	
Rationale	
<p>The question assesses learning outcome E2(b) <i>identify alternatives for investment of short-term cash surpluses</i>. It examines candidates' ability to explain the risk factors that a company needs to consider when making short term investment decisions.</p>	
Suggested Approach	
<p>Candidates should firstly explain what is meant by each type of risk and then give an example of each to illustrate the explanation.</p>	
Marking Guide	Marks
<ul style="list-style-type: none"> • Explanation of default risk • Example of default risk • Explanation of interest rate risk • Example of interest rate risk 	<p>1 mark per valid point</p> <p>up to 3 marks for each type of risk</p>
Maximum marks awarded	5 marks
Examiner's comments	
<p>The performance on this question varied considerably. The majority of candidates knew something about interest rate risk but a large number had no idea what is meant by default risk. Many candidates omitted this part of the answer, but some assumed that the default was to do with a company defaulting on a payment to a supplier or on loan repayments. Closer reading of the question would have shown the candidates that the question was about investing a cash surplus and that these comments were not relevant to the answer. However, most candidates knew about interest rate risk and usually secured at least a couple of marks for discussing variable interest rates and the effect on an investment, occasionally also providing an example of such an investment.</p> <p><i>Common errors</i></p> <ol style="list-style-type: none"> 1. Failure to answer the question that was asked. 2. Failure to read the question carefully. 3. Inability to explain default risk. 	

Question 2(f)	
(i)	<p>Calculate the return per machine hour for each product if a throughput accounting approach is used.</p> <p style="text-align: right;"><i>(2 marks)</i></p>
(ii)	<p>Calculate the profit for the period, using a throughput accounting approach, assuming the company prioritises Product B.</p> <p style="text-align: right;"><i>(3 marks)</i></p>
<i>(Total for sub-question (f) = 5 marks)</i>	
Rationale	
<p>The question assesses learning outcome A1(a) <i>compare and contrast marginal (or variable), throughput and absorption accounting methods in respect of profit reporting and stock valuation</i>. It examines candidates' ability to calculate the return per machine hour using a throughput accounting approach and calculate profit on a throughput accounting basis.</p>	
Suggested Approach	
<p>In part (i) candidates should firstly calculate the throughput contribution for each product and then calculate the throughput contribution per machine hour for each product. In part (ii) they should use the limited machine hours to produce the full sales demand of Product B and then use the remaining machine hours to produce Product A. The resultant total contribution can then be calculated and the fixed cost deducted to calculate the profit.</p>	
Marking Guide	Marks
Throughput contribution	1 mark
Return per machine hour	1 mark
Number of units produced	1 mark
Total contribution	1 mark
Fixed costs	½ mark
Profit	½ mark
Maximum marks awarded	
5 marks	
Examiner's comments	
<p>Most candidates were able to answer part (i), usually earning the full two marks. Candidates however struggled with part (ii). Many assumed that to prioritise Product B meant that only Product B should be produced. Other candidates confused units and hours and were unable to calculate the number of units of Product A that could be produced. When calculating the profit in part (ii) candidates often failed to use the \$56 and \$57.5 return per machine hour or contribution per unit calculated in part (i). Instead they used the profit figures of \$16 and \$24, multiplying by 3,200 and 8,000 units respectively.</p> <p><i>Common errors</i></p> <ol style="list-style-type: none"> 1. Deducting labour and overhead costs from selling price when calculating throughput contribution. 2. Multiplying the throughput contribution by 0.5 hours and 0.8 hours rather than dividing. 3. Assuming the phrase 'prioritises Product B' meant to only produce Product B. 4. Using the profit per unit given in the question to calculate the profit in part (ii). 	

Section C – 50 marks
ANSWER BOTH QUESTIONS

Question 3

- (a) **Calculate** the following variances for the furniture company for last year:
- (i) the sales mix contribution variance (3 marks)
 - (ii) the sales quantity contribution variance (3 marks)
- (b) **Explain** the meaning of the variances calculated in (a) above.
You should refer to the figures calculated to illustrate your answer. (5 marks)
- (c) **Prepare**, for **sideboards** only, a statement for last year on a marginal cost basis that reconciles the budgeted contribution to the actual contribution.
The statement should show the variances in as much detail as possible. (11 marks)
- (d) **Explain** THREE factors that a company would need to consider before deciding whether to investigate a variance. (3 marks)

(Total for Question Three = 25 marks)

Rationale

The question assesses two learning outcomes. Part (a) assesses learning outcome A1(d) *apply standard costing methods, within costing systems, including the reconciliation of budgeted and actual profit margins*. It examines candidates' ability to calculate sales mix and sales quantity variances. Part (b) assesses learning outcome A1(f) *interpret material, labour, variable overhead, fixed overhead and sales variances, distinguishing between planning and operational variances*. It examines candidates' ability to explain the meaning of the two variances calculated in part (a). Part (c) also assesses learning outcome A1(d) *apply standard costing methods, within costing systems, including the reconciliation of budgeted and actual profit margins* and examines candidates' ability to reconcile the budgeted and actual contribution for one of the products. Part (d) also assesses learning outcome A1(f) *interpret material, labour, variable overhead, fixed overhead and sales variances, distinguishing between planning and operational variances*. It examines candidates' ability to explain the factors that a company would consider when determining whether a variance required investigation. (for example 'the likelihood of a variance being controllable' is not concerned with the significance of the variance)

Suggested Approach

In part (a) candidates should calculate the sales mix contribution variance and the sales quantity contribution variance. In part (b) they should use the figures calculated in part (a) to explain the meaning of these variances. In part (c) candidates should firstly calculate the budgeted contribution and the actual

contribution for sideboards for the period. They should then calculate each of the variances for sales, material, labour and variable overheads. They should then prepare a reconciliation statement starting with the budgeted contribution and then showing each of the individual variances to reconcile the budgeted contribution to actual contribution. In part (d) candidates should clearly explain three factors that should be considered when deciding whether to investigate a variance.

Marking Guide	Marks
Part (a)	
Sales mix contribution variance	3 marks
Sales quantity contribution variance	3 marks
Part (b)	
Explanation of effect of change in quantity	1 mark per
Explanation of effect of change in mix	valid point
	Max 5 marks
Part (c)	
Original budgeted contribution	2 marks
Sales volume contribution variance	1 mark
Selling price variance	1 mark
Direct material variance	1 mark
Direct labour rate variance	1 mark
Direct labour efficiency variance	1 mark
Variable overhead expenditure variance	1 mark
Variable overhead efficiency variance	1 mark
Actual contribution	2 marks
Part (d)	
1 mark per factor	
The size of the variance	
The likelihood of the variance being controllable	
The likely cost versus the potential benefits of investigation	Max 3 marks
Other factors are acceptable.	

Maximum marks awarded	25 marks
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Examiner's comments

In part (a) very few candidates calculated both variances correctly with a large proportion of candidates calculating the volume variance instead of the quantity variance. A minority of candidates calculated a variety of other variances that included actual selling prices and/or actual costs.

Part (b) was consequently not well answered because candidates did not know the correct variance to explain. Most candidates did however note the requirement to refer to the variances calculated in (a) and were given credit for doing so.

Part (c) was not particularly well answered. Invariably four marks were gained for the budgeted and actual contributions. However a number of candidates were unable to calculate some of the more basic variances with various errors being made. The layout of many answers was quite poor, often with rather untidy workings, no attempt at a reconciliation and poor labelling of the variances. Some candidates did not read the question correctly and tried to calculate the variances for chairs, sideboards and tables.

Part (d) was generally well answered although some answers were far too brief. Just writing the word 'size' or 'control' is not sufficient to justify a mark. Some candidates described possible causes of variances instead of answering the question asked.

Common errors

1. Calculation of a sales volume contribution variance rather than a sales quantity contribution variance.
2. Inability to explain the meaning of the variances calculated in part (a).

3. Calculating a variance per unit.
4. Using the selling price per unit to evaluate the sales quantity variance.
5. Calculating the figures in part (c) for all products rather than for sideboards only.
6. Discussing causes of variances rather than the factors to consider before deciding whether to investigate variances.
7. Providing one word answers when the question verb is 'explain'.

Question 4

- (a) **Advise** the directors of the company whether they should go ahead with the investment from a financial perspective.

You should use net present value (NPV) as the basis of your evaluation.

Workings should be shown in \$millions (\$m).

(12 marks)

(b)

- (i) **Calculate** the sensitivity of the investment decision to a change in the level of annual fixed cost relating to the retail outlets i.e. not including the marketing costs.

(4 marks)

- (ii) **Explain** the benefits of carrying out a sensitivity analysis before making investment decisions.

(3 marks)

(c)

- (i) **Calculate** the payback period of the project.

(2 marks)

- (ii) **Explain** the reasons why a company's management may be interested in the payback period of a project. You should use the scenario given above to illustrate your answer.

(4 marks)

Total for Question Four = 25 marks

Rationale

Part (a) assesses learning outcomes C1(b) *apply the principles of relevant cash flow analysis to long-run projects that continue for several years* and learning outcome C2(a) *evaluate project proposals using the techniques of investment appraisal*. It examines candidates' ability to identify the relevant cash flows of a project and then apply discounted cash flow analysis to calculate the net present value of the project. Part (b) assesses learning outcome C1(f) *apply sensitivity analysis to cash flow parameters to identify those to which net present value is particularly sensitive*. It examines candidates' ability to calculate the sensitivity of the outcome to changes in one variable and then to explain the benefits of carrying out a sensitivity analysis. Part (c)(i) also assesses learning outcome C2(a) *evaluate project proposals using the techniques of investment appraisal*. It examines candidates' ability to calculate the payback period of a project. Part (c)(ii) assesses learning outcome C2(b) *compare and contrast the alternative techniques of investment appraisal*. It examines the candidates' ability to discuss why payback might be used in practice despite its theoretical disadvantages.

Suggested Approach

In part (a) candidates should firstly calculate the expected sales revenue in Year 1 and then add \$100m each year to calculate sales revenues for years 2 to 4. The contribution can then be calculated as 60% of

sales revenue. They should then identify the other relevant cash flows for each year of the project. The tax depreciation and tax payments should then be calculated. The net cash flows after tax should be discounted at the discount rate of 8% to calculate the NPV of the project. In part (b)(i) the cash flows for the fixed costs should be identified and the effect of tax on these cash flows should be calculated. The net cash flows should then be discounted at 8% to calculate the present value of the cash flows associated with fixed costs. This can then be compared to the NPV of the project to calculate the sensitivity of the project to changes in the fixed costs. In part (b)(ii) candidates should clearly explain the benefits of carrying out a sensitivity analysis. In part (c)(i) the project cash flows before discounting from part (a) should be used to calculate the payback period. In part (c)(ii) candidates should then explain the reasons why payback may be used in investment appraisal.

Marking Guide	Marks
Part(a)	
Year 1 sales revenue	1 mark
Year 2 - 4 sales revenue	1 mark
Years 1 - 4 contribution	1 mark
Fixed costs excluding depreciation	½ mark
Marketing costs	½ mark
Tax depreciation	2 marks
Tax payments	2 marks
Initial investment/residual value	1 mark
Working capital	1 mark
Present value of cash flows	½ mark
Net present value of cash flows	½ mark
Investment decision	1 mark
Part (b)(i)	
Calculation on tax cash flows related to fixed costs	2 marks
Present value of fixed costs net of tax	1 mark
Calculation of sensitivity of investment decision	1 mark
Part (b)(ii)	
1 mark per valid point	Max 3 marks
Part (c)(i)	
Calculation of cumulative cash flows	1 mark
Calculation of payback period	1 mark
Part (c)(ii)	
1 mark per valid point	Max 4 marks
Maximum marks awarded	25 marks

Examiner's comments

Part (a)(i) of question 4 was generally well done with most candidates achieving a pass in this part of the question. Some candidates however are still making fundamental errors such as including depreciation and sunk costs in the cash flows. The calculation of the tax depreciation particularly in the final year is still causing problems for some candidates. Many candidates either ignored the residual value or if it was treated correctly the tax was included as a credit rather than a charge.

Part (b)(i) was badly answered although candidates invariably knew the general formula required. Few candidates thought to adjust the fixed costs for tax. Many candidates also did not discount the fixed costs and some just used one year's fixed costs. Part (b)(ii) was well answered with most candidates understanding the benefits of carrying out a sensitivity analysis.

In part (c)(i), there were relatively few correct answers. The payback period was often calculated using the discounted cash flows or even the cash flows before tax, using contribution only or using sales

revenue only. Some candidates counted the investment in year 0 as the first year, so the payback period ended up being a year longer than it should have been. In part (c)(ii) the reasons for management's interest in payback were reasonably well explained.

Common errors

1. Including sunk costs and depreciation as cash flows.
2. Failure to release the working capital in Year 4.
3. Including both sales revenue and contribution as positive cash flows.
4. Demonstrating confusion between variable costs and contribution.
5. Treating the balancing charge in Year 4 as a tax benefit.
6. Including the working capital in the tax depreciation calculation.
7. Failing to adjust the fixed costs for tax.
8. Failing to discount the cash flows related to fixed costs.
9. Using only one year's fixed costs.
10. Using incorrect cash flows to calculate the payback period.
11. Treating Year 0 as one year when calculating the payback period.
12. Inability to correctly calculate a proportion of a year.