CPA IRELAND | CERTIFIED PUBLIC ACCOUNTANTS

STRATEGIC PERFORMANCE MANAGEMENT

PROFESSIONAL 2 EXAMINATION - APRIL 2018

NOTES:
You are required to answer **ALL** Questions.

PRESENT VALUE TABLES ARE PROVIDED

Time Allowed
3.5 hours plus **20 minutes** to read the paper.

Examination Format
This is an open book examination. Hard copy material may be consulted during this examination subject to the limitations advised on the Institute's website.

Reading Time
During the reading time you may write notes on the examination paper, but you may not commence writing in your answer booklet.

Marks
Marks for each question are shown. The pass mark required is 50% in total over the whole paper.

Answers
Start your answer to each question on a new page.

You are reminded to pay particular attention to your communication skills, and care must be taken regarding the format and literacy of your solutions. The marking system will take into account the content of your answers and the extent to which answers are supported with relevant legislation, case law or examples, where appropriate.

Answer Booklets
List on the cover of each answer booklet, in the space provided, the number of each question attempted. Additional instructions are shown on the front cover of each answer booklet.

THE INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS IN IRELAND

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Time Allowed: 3.5 hours, plus **20 minutes** to read the paper.
You are required to answer **ALL** Questions.

Read the following case study and answer the questions which follow.

Case study: 'Osheanic Group PLC"

Shortly after qualifying as an accountant, you are engaged as a consultant to advise the board and the five divisional managers of Osheanic Group PLC on the design and implementation of accounting systems which will enable the Group to improve its strategic performance. Prior to your engagement, the Group had employed the same management accountant for a number of decades. The Board of the Group believes that this accountant had, in their words, become "fossilised in his attitude to the Group's accounting systems, and was certainly no enthusiast for change". However, you have also found that – even now - the Group is not always as open to change as you might wish.

You recently talked in confidence to a professional colleague, Mary Murphy, about the situation in which you find yourself. *"On the one hand"*, you tell her, *"the Board has engaged me for all the right reasons. They are encouraging me to identify areas where accounting systems need to change in order to facilitate improved performance management at both Group and division levels. On the other hand, when I do call out the need for specific new approaches, colleagues are often suddenly a lot less enthusiastic. Perhaps, a lot of them got comfortable with the old regime: the previous accounting systems sometimes prevented light being shone on areas of underperformance, while at the same time the conservatism of the previous management accountant meant that there was someone to blame when necessary improvements to accounting systems weren't made. Now that I am involved in the Group, managers are expected to accept change, and even to identify areas where it may be necessary. That brings a lot of people out of their comfort zone. When I make a suggestion to expand the detail or scope of an accounting report, often the response is that there is no need for the extra information or that it will provide managers with excuses to hide behind when questioned about poor performance."*

You have explained to Mary that you have persisted with your efforts to demonstrate the need for new and more detailed systems to shed extra light on specific areas of operation and/or strategy that may need attention, even in the face of this lack of enthusiasm or occasional outright hostility. To illustrate your efforts to foster improved strategic performance management in the Group, you have selected a number of issues arising in various divisions within the Group. These include suggestions on your part for more advanced variance analysis reports, the implementation of target and lifecycle costing for management of a product portfolio, and changes in the performance measures used for a variety of purposes.

To address these issues, you are required to answer the five questions on the following pages.

1. The **Pacific Division**, manufactures and sells a wide variety of consumer products. The division manager, John Robertson, is often disappointed that actual profits are significantly below budget. This is mainly because of significant overruns in production costs.

In the most recent operating period, the division manufactured and sold 18,500 units of one of its best-selling products, the 'HS1'. The standards for labour cost used in preparing the budget for that period were 3 hours of skilled labour for each unit of HS1, at a wage rate of €10 per labour hour. The actual input for this production amounted to 57,720 labour hours costing €10.30 per labour hour. In accordance with the division's normal accounting procedure, a basic variance analysis report (BVAR) was prepared to reconcile the standard and actual labour cost using two variances only, viz., a labour wage rate variance and a labour efficiency variance.

You have suggested to John Robertson that this BVAR is "accurate but not particularly insightful", and you have proposed that a more detailed reconciliation of the standard and actual labour cost should be prepared. You have strongly recommended that, in this advanced variance analysis report (AVAR), the financial effects of the following should be made explicit:

- There were significant upward pressures on labour costs in the industry as a whole because of a shortage of skilled labour during the period. On average firms had to increase their hourly wage rates by 5%, but (because of its positive reputation as an employer which treats staff well in all respects) the Pacific Division was able to hire sufficient labour input to meet its production needs, while offering just a 3% increase in the hourly wage rate.

- The division's production manager experimented with a new sequence of processes for manufacturing the product. He has acknowledged that the experiment was not a success, and that (given the new sequence) 3.1 hours of labour time would be needed to manufacture each unit of HS1.

- 250 of the 57,720 actual labour hours arose due to idle time, when staff had to be paid even though there was no work for them to do. This arose because of a rostering error by a member of the human resources team.

REQUIREMENT:

(a) Prepare the two labour cost variance analysis reports referred to above i.e., the BVAR and the AVAR.

(17 marks)

(b) John Robertson has stated that: "I don't see the point of the AVAR. Ultimately, where cost overruns of any kind occur, the buck stops with me and the middle managers who report to me. I need to find out what the problems are and how to resolve them, but the AVAR doesn't help me to do that: all it does is provide numbers which can be cherry-picked in an attempt to provide excuses for poor performance".

In a detailed response to John Robertson critically evaluate the usefulness of the AVAR in improving the future performance of the division. Support your answer by reference to the results of your calculations in part (a) above.

(8 marks)

[Total: 25 Marks]

2. The **Atlantic Division** manufactures a single product. In January of this year, raw materials for the product were purchased at €20 per kilogram. The manager of the Atlantic Division, Emer Wall, was disappointed that only 60% of the units produced in that month passed quality control tests on the first attempt; meaning that 40% of units had to be repaired before sale. Emer believes that the principal reason for the high incidence of repairs was that raw materials purchased were substandard and this made it difficult to achieve output with the necessary quality.

Emer, therefore, decided to switch the division's raw material purchasing to a new supplier with effect from 1 February. The new supplier charged a significantly higher price (€25 per kilogram). However, the new supplier provided better quality of raw material, and Emer believes that these superior raw materials explain the dramatic improvement (to 94% of units produced) in the proportion of output which passed quality control tests on the first attempt. Another benefit of the better quality raw materials meant that the finished product became more attractive to customers, and so the division was able to increase the selling price per unit of the product from €250 in January to €260 in February.

Demand for the product is very strong, but the division is unable to increase its monthly machine capacity in the short term. Machinery was used to its full capacity in both January and February. Output of the finished product in February was 10,000 units. Raw materials and direct labour can be purchased in any quantities desired. Direct labour is paid at a wage rate of €11 per hour. Variable overheads amount to €7 per direct labour hour, plus €8 per machine hour. The inputs required for production of one unit (and for repair of a unit where necessary) are shown in the following table:

	Production	**Repair**
Raw materials	2 kg.	1.5 kg.
Direct labour hours	2.5 hours	1.2 hours
Machine hours	6 hours	2 hours

REQUIREMENT:

(a) Assess whether the decision to change raw materials supplier with effect from 1 February was financially justified. Present a detailed and comprehensive financial analysis to support your answer.

(14 marks)

(b) Emer Wall has commented: "I think it's a mistake to get accountants involved in the management of quality, and let me give you three instances of that. First, all that the report in part (a) does is to confirm what I know intuitively already, i.e., that investing in better quality is always a good thing. Second, I don't see any point in me receiving a monthly Cost of Quality report since all it would do is list certain costs which are already included in the Income Statement. Third, I don't want to receive any information about non-financial quality measurements from my accountants: I prefer to wait until there is clear evidence that quality problems are affecting our 'bottom-line' net profit, and then is the time to take action".

Critically evaluate Emer Wall's comments. (11 marks)

[Total: 25 Marks]

3. The **Arctic Division** is a manufacturer of mid-range dashboard cameras (dash cams). Because of rapid technological change and intense competition from other manufacturers, product lifecycles are short and the industry is characterised by intense competition.

The division's research and development (R & D) unit is carrying out design work at present on a new type of dash cam. It is estimated that the total R & D costs for the dash cam will amount to €180,000. Once the product enters the production and sales phase of its lifecycle, it is estimated that the manufacturing cost per unit will be €25 and the selling price of each dash cam will be €58.50. It is estimated that a total of 12,000 units will be sold before demand for the product ceases. After that, the division will incur €90,000 'end-of-life costs' in dismantling and removing the production facilities used to manufacture the dash cams.

The division makes use of target costing and lifecycle costing in managing its product portfolio. A markup of 30% on cost from all new products is required.

REQUIREMENT:

(a) Calculate the target cost and lifecycle cost (per unit) of the dash cam and, on this basis, justify whether the product should be manufactured.

(7 marks)

(b) Assume that, by increasing its R & D expenditure on the dash cam by 15% the division will achieve a 42% reduction in the end-of-life costs, together with an as-yet unspecified reduction in the manufacturing cost per unit. The sales volume or price will not be affected. Prepare calculations to show what size of reduction in the manufacturing cost per unit would enable the division to achieve the required markup.

(6 marks)

(c) The manager of the Arctic Division has asked you to illustrate how the changes in part (b) might occur in practice. Recommend and justify one example of how a design change would bring about the cost savings (without adversely affecting sales), as referred to in part (b) above.

(7 marks)

[Total: 20 Marks]

4. You have decided to critically analyse the approach to divisional performance evaluation in the Group, using the **Carpentaria Division** as an example for this purpose. You have determined that each division has significant operating autonomy during the financial year. Divisions are not permitted to undertake new capital investments (except for the purchase of items costing under €2,000 each) but they have considerable freedom and authority to expand or contract their operations by, for example, undertaking new contracts with customers or discontinuing existing contracts. There is an end-of-year financial review of each division using divisional net profit before tax as the performance measure. For the Carpentaria Division, this was calculated as follows for last year:

Sales	€1,000,000
Costs	€690,000
Divisional net profit before tax	€310,000

You are surprised to find that the normal calculation of divisional net profit is laid out in such an aggregated fashion. On further investigation, you determine that the €690,000 costs are made up of the following:

- €350,000 of variable production and distribution costs.
- €160,000 of short-term lease payments, arising from the division manager's frequent decisions to lease extra production equipment or trucks for periods of between three and six months.
- €80,000 salary of the division manager; this is a role which must be filled so long as the division remains in business and this salary is consistent with the prevailing rate in the labour market for this type of manager.
- €100,000 of expenses incurred at Group Headquarters and allocated to Carpentaria as its 'fair share' of these Group-level expenses. These do not relate to any specific activity carried out at the request of the individual division.

REQUIREMENT:

(a) Prepare a more detailed calculation of the divisional net profit, using the information above. Your answer should include subtotals showing the profit measures most appropriate for reporting managerial performance and economic performance. Justify, in detail, your choice regarding the most appropriate measures of managerial and economic performance.

(8 marks)

(b) You have determined that Group-level expenses are allocated to divisions in proportion to each division's turnover for the year. Critically evaluate this approach.

(6 marks)

(c) Should the Carpentaria Division be treated as a profit centre rather than an investment centre? Justify your answer fully, referring in specific detail to the level of autonomy available to the division.

(6 marks)

[Total: 20 Marks]

5. The **Bothnia Division** operates a business which operates a small publishing house specialising in children's fiction. Its books are offered for sale directly to the public via its website. In order to attract traffic to the site, Bothnia Division sells its books at the same prices as they are available in traditional bookstores. It does not charge website customers for book delivery.

This Division recently carried out an activity-based costing analysis of its business. The following are some of the cost driver rates identified:

- Storage: €0.10 per day for storage of a book for one day between physical production and sale through the website.
- Delivery: €1.00 per book.

REQUIREMENT:

(a) Advise how Bothnia Division might use its cost driver rates in a benchmarking exercise with other online book retailers. Your answer should include an examination of the main barriers to and limitations of such an exercise.
(6 marks)

(b) Apart from benchmarking, recommend two other appropriate ways in which Bothnia Division could use the information about cost driver rates provided above to bring about improved cost-efficiency in its business.
(4 marks)

[Total: 10 Marks]

[Total: 100 Marks]

END OF PAPER

SUGGESTED SOLUTIONS

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SOLUTION 1

(a) Basic variance analysis report (BVAR):

- Standard labour cost = (3LH * €10 = €30 per unit) * 18,500 = €555,000.
- Actual labour cost = €10.30 * 57,720 = €594,516.
- Labour wage rate variance (LWRV)

  = (Actual wage rate – Standard wage rate) * Actual hours

  = (€10.30 - €10 = €0.30) * 57,720

  = €17,316 Unfavourable.
- Labour efficiency variance (LEV)

  = (Actual hours – Standard hours) * Standard wage rate

  = [57,720 – (3 * 18,500 = 55,500) = 2,220] * €10

  = €22,200 Unfavourable.
- Reconciliation:

Standard labour cost	€555,000	
Labour wage rate variance (LWRV)	€17,316	U
Labour efficiency variance (LEV)	€22,200	U
Actual labour cost	€594,516	

Advanced variance analysis report (AVAR):

- Preliminary:

Ex ante standard wage rate (XASWR)	€10
Ex post standard wage rate (XPSWR) = €10 + 5%	€10.50
Actual wage rate (AWR)	€10.30
Ex ante standard hours (XASH) = 3 * 18,500 =	55,500
Ex post standard hours (XPSH) = 3.1 * 18,500 =	57,350
Actual hours (AH)	57,720

- "Planning" LWRV

  = (XPSWR – XASWR) * XPSH

  = [€10.50 - €10] * [57,350 LH]

  = €28,675 Unfavourable.

- "Planning" LEV

  = (XPSH – XASH) * XASWR

  = (57,350 – 55,500) * €10

  = €18,500 Unfavourable.

- "Operational" LWRV

  = (AWR – XPSWR) * AH

  = (€10.30 - €10.50) * 57,720 LH

  = €11,544 Favourable.

- "Operational" LEV

  = (AH – XPSH) * XPSWR

  = (57,720 – 57,350) * €10.50

  = €3,885 Unfavourable.

Analysis of operational LEV into "idle time" and "pure" elements:

- Labour idle time variance (LITV)

  = Idle labour hours paid for * XPSWR

  = 250 hours * €10.50

  = €2,625 Unfavourable.

- Pure labour efficiency variance (PLEV)

  = (Actual "active worked hours" – XPSH) * XPSWR

  = [(57,720 – 250 = 57,470) – 57,350] * €10.50

  = €1,260 Unfavourable.

- Reconciliation:

Standard labour cost		**€555,000**
"Planning" LWRV		€28,675 U
"Planning" LEV		€18,500 U
"Operational" LWRV		€11,544 F
Labour idle time variance (LITV)	€2,625 U	
Pure labour efficiency variance (PLEV)	€1,260 U	
"Operational" LEV		€3,885 U
Actual labour cost		**€594,516**

(17 marks)

(b) John's general attitude (of accepting full responsibility for cost overruns rather than looking for excuses) is a robust and positive one. However, it does not follow that the AVAR has no useful information content for the purposes which he identifies.

For example the BVAR shows a large and unfavourable LWRV of €17,316. This is very significant, but does not provide a basis for action because it is the net effect of two very different underlying problems. For one thing, market forces drove up the labour cost of this type of production by €28,675. There is little the division can do to resist this, except perhaps redesign the product so that it requires less hours of skilled labour input per unit. The other factor at work is that the division's positive reputation as an employer has (in effect) created sufficient employee goodwill that staff are willing to work for less than the market hourly wage rate, delivering a saving to the company of €11,544. Continued fostering of this goodwill is worthwhile because it delivers this significant cost saving.

Turning to labour efficiency, the BVAR again shows a large and unfavourable variance (€22,200). John is rightly keen that he and his staff should accept responsibility for this and take action to prevent is recurrence, and the AVAR provides a detailed analysis of the LEV to facilitate this. Most of it (€18,500) can be attributed to the production manager's experiment with a new sequence of processes. This manager has already decided that this should be discontinued, so for the most part corrective action in relation to the LEV has already been taken. A smaller part (€2,625) is due to a rostering error by a human resources staff member – so it this person (rather than the production manager) who should be tasked with preventing recurrence of rostering errors, e.g., perhaps through investment in software for staff scheduling. Finally there is still a part of the LEV (€1,260) which remains unexplained by either of these two other factors, so John will need to commission further investigation in order to identify the underlying cause of this variance and prevent its recurrence.

(8 marks)

Tutorial notes

- *Purpose of question:* To require candidates to apply an advanced variance analysis system for purposes of planning and control purposes, including a critical appraisal of a particular variance analysis system in identifying the reasons for cost overruns and taking corrective action (Syllabus Topic 2).

- *Options:* Calculations may validly be laid out in a variety of ways in the answer to part (a). Various alternative points are acceptable in answer to part (b).

- *Essential components:* Candidates need to be able to demonstrate the ability to calculate detailed variances, including planning and operational variances. They also need to be able to critically evaluate the usefulness of the detailed variances for directing attention at underlying causes and necessary corrective actions.

SOLUTION 2

(a) The decision to change the raw materials supplier from 1 February was justified and resulted in an increase in net profit by €315,300

- Average MH per unit of output:

	January	February
Production	6 MH	6 MH
Repair	40% * 2 MH = 0.8 MH	6% * 2 MH = 0.12 MH
Total	6.8 MH	6.12 MH

- Capacity = 10,000 units * 6.12 MH = 61,200 MH.

- January output = 61,200 MH / 6.8 MH = 9,000 units.

- Average DLH per unit of output:

	January	February
Production	2.5 DLH	2.5 DLH
Repair	40% * 1.2 DLH = 0.48 DLH	6% * 1.2 DLH = 0.072 DLH
Total	2.98 DLH	2.572 DLH

- Average Raw Materials per unit of output:

	January	February
Production	2 kg	2 kg
Repair	40% * 1.5 = 0.6 kg	6% * 1.5 = 0.09 kg
Total	2.6 kg	2.09 kg

- Net change in profit:

	January	February	Effect on profit
Sales	9,000 * €250 = €2,250,000	10,000 * €260 = €2,600,000	+ €350,000
Raw materials	9,000 * 2.6 * €20 = €468,000	10,000 * 2.09 * €25 = €522,500	MINUS €54,500
Wages	9,000 * 2.98 * €11 = €295,020	10,000 * 2.572 * €11 = €282,920	+ €12,100
Labour-related overhead	9,000 * 2.98 * €7 = €187,740	10,000 * 2.572 * €7 = €180,040	+ €7,700
Machine-related overhead	9,000 * 6.8 * €8 = €489,600	10,000 * 6.12 * €8 = €489,600	NONE
Profit	€809,640	€1,124,940	+ €315,300

(14 marks)

(b) Instance #1: That the report "confirms what [Emer knows] intuitively":

It is not ALWAYS justified in cost-benefit terms to pay for high quality. What the report shows is that it was justified in this instance but with different numbers (e.g., a less dramatic improvement in the rate of output failing quality control tests) the decision to change raw materials suppliers might not have been justified. Emmer's approach seems to be to make and implement the decision first, and then to analyse afterwards. In this way she is using the financial analysis "for support rather than illumination" which is a serious mistake.

Instance #2: That a monthly COQ report would not be useful:

COQ distinguishes between value-adding quality costs (prevention) and non-value-adding (e.g., repair costs). The Income Statement does not make this distinction and therefore is less effective at identifying "worthwhile" versus "wasteful" costs of this type.

Quality costs are subsumed into other cost headings in the Income Statement, so management are not alerted to their size, nature, and controllability. Therefore the data as shown in the COQ is likely to act as a stimulus to management in addressing quality issues and reducing quality-related costs, whereas the same data subsumed into miscellaneous overhead categories in the Income Statement is not.

Instance #3: That it is not useful to receive nonfinancial quality measures:

Nonfinancial quality measures can give "lead indication" of quality problems so that they can be corrected at an early stage, rather than waiting for the financial damage to become so serious that it is obvious from the income statement.

Example: An increasing proportion of products returned under warranty [non-financial measure] is a "lead indicator" of low customer satisfaction. Emer is correct in implying that one approach is to ignore this and wait until the downstream consequences (such as lost sales) are evident from the Income Statement. A more proactive approach, made possible by the reporting and use of the proportion of products returned under warranty, is to identify the problem at a an earlier stage and intervene so that customers are not repeatedly disappointed and ultimately lost.

Emmer's approach is analogous to "ignore possible fire hazards, just wait until you can see the flames".

(11 marks)

Tutorial notes

- *Purpose of question:* To assess candidates' ability to implement and critically evaluate performance measurement systems in an environment of total quality management, including a critique of financial and nonfinancial performance measurement in this context (Syllabus Topic 4).

- *Options:* The format and layout sequence of calculations in the answer to part (a) may be different from that shown here from. Similarly, there can be variety in the specific points made in the answer to part (b).

- *Essential components:* Notwithstanding the "options" mentioned above, candidates' answers must have certain key elements. A comprehensive financial analysis is required in answer to part (a). In part (b), the division manager's attitude is based on important misconceptions in relation to all three instances and it is essential that these be fully responded to.

SOLUTION 3

(a) Target cost = €58.50 / 130% = €45 per unit

Lifecycle cost:

- R & D cost = €180K
- Manufacturing cost = €25 * 12,000 = €300K
- End-of-life cost =€90K
- Total lifecycle cost = €180K + €300K + €90K = €570K
- Lifecycle cost (per unit) = €570K / 12,000 units = €47.50 per unit.

Hence:
Product should not be launched, on the basis of the present design. The lifecycle cost (€47.50) is substantially higher than the maximum acceptable (€45).

(7 marks)

(b)
- Revised R & D cost = €180K + 15% = €207K
- Revised end-of-life cost = €90K less 42% = €52,200
- Revised cost per unit, excluding manufacturing cost
  = (€207K + €52,200 = €259,200) / 12,000 units = €21.60 per unit
- Maximum tolerable manufacturing cost per unit
  = €45 target cost LESS €21.60 "other" cost = €23.40
- Hence, what is required is a reduction of at least €25 - €23.40 = €1.60.

(6 marks)

(c) Example: Modify the design of the dashcam so that it uses common components which are already being sourced from existing suppliers for the manufacture of other handsets, rather than unfamiliar components for which a whole new supply chain (including possible new suppliers) must be established.

How this would result in savings in manufacturing cost: Costs of establishing (and holding) new types of inventory would be avoided. Down-time due to production errors by staff would be less likely because the components are familiar to them. There would be no need for quality testing of additional supplies of components as the suppliers are already established and trusted.

How it would result in savings in end-of-life cost: End-of-life costs, like all costs incurred late in the product lifecycle, are largely "locked in" (or predetermined) by the features of the initial design. For example, one factor which would reduce end-of-life costs would be if the production facilities are easy to recycle (e.g., machines which can be reprogrammed to manufacture a different product). This would help to recoup some of the capital costs of purchasing the production facilities in the first place and would reduce landfill or dumping costs.

(7 marks)

Tutorial notes

- *Purpose of question:* To assess candidates' ability to apply a target and lifecycle costing approach to the management of a proposed new product, including requiring candidates to identify and evaluate the likely downstream consequences of a design change made early in the product lifecycle (Syllabus Topic 1).
- *Options:* The sequence of calculations in the answers to part (a) and (b) can vary. The answer to part (c) requires one good example, so of course the one identified here is not the only acceptable possibility.
- *Essential components:* In their answers to parts (a) and (b) candidates need to be able to apply target and lifecycle costing techniques. In part (c) they need to provide an example of a possible design change and fully trace through its downstream cost consequences, including on manufacturing and end-of-life costs.

SOLUTION 4

(a) Detailed profit calculation:

Sales		€1,000,000
Variable production & distribution costs	€350,000	
Short-term lease payments	€160,000	
Total controllable costs		€510,000
Controllable contribution		**€490,000**
Division manager's salary		€80,000
Divisional contribution		€410,000
Allocation of Group headquarters expenses		€100,000
Divisional net profit before tax		**€310,000**

The profit measure which is most appropriate for managerial performance evaluation is controllable contribution. It captures the three items which the division manager most specifically controls, viz., sales; variable production & distribution costs (since the manager can expand or contract operations), and short-term lease payments (since these payments arise from decisions made by the division manager).

The profit measure which is most appropriate for economic performance evaluation is most likely divisional contribution or divisional net profit before tax. The question is what is the incremental profit caused by the existence of the division (or conversely what profit would be lost if the division were to be discontinued). The division manager's salary is clearly an incremental cost in this sense since it must be paid at its current level if the division is to continue to operate. It would be much harder to argue that the allocation of Group headquarters expenses is an incremental cost in this sense, since it doesn't relate to the provision of any specific services to the division. The only exception would be if the Group headquarters would be likely to shrink its operations in response to the discontinuance of a division.

(8 marks)

(b) In favour of this approach:

- "Ability to bear": the divisions with the largest turnover get the correspondingly largest allocation of this cost.
- Even though there is no direct connection between the amounts allocated and the provision of any particular service to the division, nevertheless it is likely that (in the long term) larger divisions benefit proportionately more from the functions fulfilled by Group headquarters.

Against this approach:

- The divisions with the largest turnover don't necessarily have the largest profit margins. It can be argued that if "ability to bear" is the criterion, then the allocation should be in proportion to the contribution or profit of each division.
- The division manager knows that each extra €1 of sales will result in an increased allocation of the Group headquarters costs. Therefore the allocation basis represents an active disincentive to the generation of sales.

(6 marks)

(c) It would be more appropriate to treat Carpentaria as an investment centre. This is because (in practice) the division manager has considerable ability to influence the de facto level of investment by the division. The existing profit centre approach turns a blind eye to this fact and is likely to result in biasing the division manager towards certain types of investment which may not be optimal for the company. Details are as follows:

Influence on the level of investment: The division manager can make a sequence of small investments (e.g., 10 investments of €1,500 each, costing the same as a single investment of €15,000 which the manager would not be allowed to undertake). This can result in a sequence of "islands of automation" even where a single large investment would cost the same and would be more beneficial. Another disadvantage of the current approach is that the profit centre manager is credited with the profits from the investment but is not levied with any finance charge in respect of the cost of capital which the Group incurs.

There is also significant expenditure on leasing, which hints strongly at the division manager using short-term leases as a way to circumvent the ban on capital expenditures exceeding €2,000 each.

The fact that the division can expand or contract operations by undertaking or discontinuing contracts: One consequence of this is that, in practice, the division can significantly influence the Group's level of investment in working capital items (such as the increase in trade debtors, inventory, etc., which typically arise when a new customer contract is accepted). In order for the division manager be held fully accountable for all financial consequences of his/her decisions, it is important that s/he should be levied the appropriate finance charge associated with this incremental investment, as happens in an investment centre structure.

(6 marks)

Tutorial notes

- *Purpose of question:* To test candidates' ability to choose and critically evaluate alternative measures of the profitability of a division, including the distinction between economic and managerial performance evaluation (Syllabus Topic 3).

- *Options:* In part (a) the terminology used for the profit subtotals can differ from what appears above (the terminology used here is from the Drury text). Also in part (a), either of two choices can be validly made as to which is the more appropriate economic performance measure (as explained above), but a comprehensive justification must be used for whichever measure is chosen. The specific points made in answers to parts (b) and (c) can vary somewhat from the solution above, but some points are essential (see below).

- *Essential components:* Candidates need to show and justify two appropriate performance measures in part (a). In part (b) it is essential that the weaknesses of the current basis of allocation be brought out. In part (c) it must be brought out that, for reasons rooted in the level of divisional autonomy in this case, it would be much more appropriate to treat the division as an investment centre rather than a profit centre.

SOLUTION 5

(a) This would involve Bothnia Division comparing its own cost driver rates (e.g., €0.10 per day for book storage) with the cost driver rates of competitors for comparable activities, with a view of identifying the "best-of-breed" competitor and learning how to emulate its success – for example, identifying the online bookseller with the lower cost driver rate for storage and finding out what operational changes Bothnia Division could make in order to reduce costs to the same level.

Barrier #1: Obtaining the relevant benchmarking information. Competitors have no incentive to cooperate (disclose their cost driver rates). Also there is no obvious way of estimating the cost driver rates from publicly available data – for example, since Bothnia Division does not charge customers for delivery, there is no published scale of delivery charges, and this deprives competitors of one possible basis of estimating its cost driver rate for this activity.

Barrier #2: Finding a directly comparable activity, given that competitors are unlikely to have exactly the same business model (integration of publishing operation with retail website). For example, compared to another website which buys books from the publisher and resells them, it is likely that Bothnia could tolerate a higher storage cost per day because it has the freedom to publish some books "on demand", i.e., physically produce certain books only when they are specifically ordered by a customer.

(6 marks)

(b) Quantify the savings from performing an activity less frequently. For example, if the division is considering in investing in the technology to enable it to produce more books "on demand", as explained above, then a full cost-benefit analysis (possibly including capital budgeting) would be needed. The cost driver rate for book storage could be used to quantify the benefit, i.e., €0.10 saving for every day of storage per book eliminated.

Understand more fully the costs attributable to certain stock units, and restructure pricing policy accordingly. For example, activity-based analysis may show certain low-price titles to be loss-making, because their modest margins are wiped out by the €1 delivery cost which Bothnia Division incurs but does not pass on to the customer.

(4 marks)

Tutorial notes

- *Purpose of question:* To assess candidates' ability to identify the means by which benchmarking and activity-based analysis could be used in an e-commerce environment (specifically a division which combines book publishing with online book retailing) (Syllabus Topics 1 and 5).
- *Options:* There is scope for variety in the points which may be made in answer to parts (a) and (b).
- *Essential components:* In part (a), candidates need to explain how benchmarking of the cost drivers could be carried out and also to explain the barriers / limitations which arise. In part (b), two significant suggestions must be made about the use of cost driver information for the purpose mentioned.