

**MANAGEMENT ACCOUNTING  
JUNE 2004**

**The examination paper is divided into TWO Sections. Section A is compulsory and carries 40 marks. Candidates should attempt THREE questions from Section B, all of which carry 20 marks each.**

You should allow yourself approximately 70 minutes in total to answer the questions in Section A, and 35 minutes for each of the questions attempted in Section B.

*Tuesday afternoon 1<sup>st</sup> June 2004*

*Time allowed: 3 hours*

**SECTION A**

*(Compulsory - answer all parts of this question)*

1. The following ten short-answer questions relate to Zalea plc, a firm that makes shop display units in wood and metal using modern manufacturing methods. The company has been in existence for five years. Its financial year runs from 1 January to 31 December.

(a) Alicia Chen, a management trainee who has recently joined Zalea plc, is uncertain what the purpose of management accounting is.

State the four management activities for which management accounting can provide information. For each of these you should also give an example of the way in which management accounting can assist managers. *(4 marks)*

(b) Zalea plc invested £35,000 in a computer controlled milling machine on 15 April 2004. Such investments qualify for a 40% initial allowance and 25% annual writing down allowances (WDAs).

(i) Calculate the capital allowances that Zalea plc can claim in the years 2004-2007, to the nearest £.

(ii) If the machine were to be scrapped in 2007, with zero disposal value, what would be the capital allowance in that year?

(iii) If the machine were to be sold for £10,500 in 2006, what would be the capital allowance in that year? *(4 marks)*

*(Continued)*

- (c) Zalea plc makes three types of display unit, each of which uses the same band saw. The band saw is available for 50 working hours per week.

Product	1 m <sup>3</sup> cupboard	1.2 m shelf	1 m <sup>2</sup> door
Demand per week (units)	300	700	400
Unit selling price £	£12	£2	£5
Variable cost per unit £	£8	£1	£2
Band saw hours per unit	0.1	0.02	0.05

Calculate the most profitable weekly production plan. *(4 marks)*

- (d) At present Zalea plc uses a marginal costing system.

State four limitations of a marginal costing system. *(4 marks)*

- (e) The directors of Zalea plc are considering replacing the existing marginal costing system with an activity-based costing (ABC) system.

Suggest four areas, other than providing product profitability information, where an activity-based costing system can generate useful information. *(4 marks)*

- (f) The company currently builds up its annual budgets from a target profit figure. The directors are considering moving over to the more usual sales-driven budget preparation process.

Set out the process for preparing a sales-driven budget for Zalea plc. *(4 marks)*

- (g) Zalea plc's directors are reviewing the company's budgeting and budgetary control system.

Identify the three basic budgeting styles identified by Hopwood and comment on their applicability to a modern manufacturing organisation such as Zalea plc. *(4 marks)*

- (h) Zalea plc's budgeted output for last week was 14,500 standard labour hours, the budgeted efficiency ratio was 100%, and the budgeted idle time ratio was 12.5%. The actual labour hours paid for last week were 16,000, the actual hours worked last week were 13,000, and the standard hours produced in the week were 12,000.

Calculate the labour capacity ratio, the idle time ratio, the labour efficiency ratio and the labour productivity ratio (to the nearest whole %). *(4 marks)*

*(Continued)*

- (i) Zalea plc's directors need to decide between two waste treatment processes, either a filter system or a precipitation system, both of which have two-year lives and zero scrap values. Zalea plc's cost of capital is 8%. The alternative cash flows and the 8% discount factors are set out below.

Process	Initial cost	Cash outflow year 1	Cash outflow year 2
	£	£	£
Filter system	25,000	15,000	13,000
Precipitation system	30,000	10,000	8,000

Year	1	2	3
8% discount factors	0.9259	0.8573	0.7938

Calculate the net present value (NPV) for each process and state which process should be chosen. Ignore corporation tax. *(4 marks)*

- (j) Zalea plc's summarised financial results for year ending 31 Dec 2003 were:

Sales	£20,250,000
Operating profit	£1,215,000
Capital employed	£8,100,000

Using the above figures, demonstrate how the company's return on capital employed (ROCE), net margin and asset turnover ratios are linked. *(4 marks)*  
*(Total: 40 marks)*

## SECTION B

(Answer THREE questions from this Section)

2. Otto Hotels plc owns and operates 52 hotels worldwide. One of the company's hotels is the Hotel Sofija, located in an East European holiday resort.

The Hotel Sofija has 80 double rooms. It only opens to the public during the peak holiday months of June, July and August. For the remainder of the year, the hotel (but not the kitchens and restaurant, which are in a separate wing of the building) is rented out at £13,000 per month to another British company, Argonauts plc. Argonauts plc, which provides its own staff, uses the hotel as a training centre. The restaurant is closed between September and May.

Guests normally stay at the Hotel Sofija on a full board (three meals a day) basis for one or two weeks. The hotel restaurant can seat 240 so it has sufficient capacity to cater for non-resident diners.

All hotel and restaurant staff are hired locally, on temporary one, two or three-month contracts.

Almost all room bookings are for couples. The few bookings by single guests can be ignored for planning purposes.

Below is the Hotel Sofija's budgeted operating statement for the year 2004 holiday season.

Month	June	July	August	Total
Hotel capacity (room nights)	2,400	2,400	2,400	7,200
Room sales (room nights)	1,200	1,680	2,160	5,040
Meals provided for residents (3 per day)	7,200	10,080	12,960	30,240
Meals sold to non-residents	4,600	6,040	7,480	18,120
<b>Revenue:</b>	<b>£</b>	<b>£</b>	<b>£</b>	<b>£</b>
Hotel @ £90 per room per night, full board	108,000	151,200	194,400	453,600
Restaurant @ £15 per meal to non-residents	69,000	90,600	112,200	271,800
Total revenue	177,000	241,800	306,600	725,400
<b>Variable costs:</b>				
Hotel laundry and other direct costs	7,200	10,080	12,960	30,240
Food and other direct restaurant costs	35,400	48,360	61,320	145,080
Head office administration charges (note (i))	8,850	12,090	15,330	36,270

(Continued)

<b>Semi-variable costs:</b>				
Hotel staff	22,800	26,640	30,480	79,920
Restaurant & kitchen staff	55,800	75,240	94,680	225,720
<b>Fixed costs (depreciation):</b>				
Hotel furniture, equipment etc (note (ii))	5,000	5,000	5,000	15,000
Restaurant furniture, equipment etc (note (iii))	14,000	14,000	14,000	42,000
<b>Total costs</b>	149,050	191,410	233,770	574,230
<b>Profit</b>	27,950	50,390	72,830	151,170

Notes:

- (i) Otto Hotels plc does not transfer the profits of its hotels to the UK. Instead, it levies a notional head office administration charge of 5% of each hotel and restaurant's turnover, including 5% of any rental income.
- (ii) At present, the £60,000 annual depreciation of hotel furniture and fittings is apportioned  $\frac{1}{12}$ th per month, to July, August and September and the remaining  $\frac{9}{12}$ ths (i.e. £45,000) is charged against the rental income from Argonauts plc.
- (iii) As the restaurant only opens during the peak holiday season, the £42,000 annual depreciation provision is apportioned equally between the months of July, August and September.

Otto Hotels plc is considering whether to open the Hotel Sofija and/or its restaurant for the whole year in future. Market research indicates that, at a price of £60 per room-night for full board, hotel occupancy during September to May would average 65% of capacity. The same research found that restaurant sales to non-residents, at an average price of £12 per meal, would average 3,500 meals per month during September to May. Staff pay rates and the prices of direct materials and services during September to May would be the same as in June, July and August 2004.

Otto Hotels plc is considering four options for the September to May period:

1. To open both the hotel and the restaurant on a normal basis
2. To open the restaurant only
3. To open the hotel and restaurant to residents only
4. To open the hotel on an accommodation-only basis, in which case the charge would be £40 per room-night to achieve 65% average capacity.

REQUIRED:

Prepare a statement for Otto Hotel plc's board of directors that sets out the impact of each option on the group's profits. (Total: 20 marks)

(Continued)

3. Bruegowns plc is a clothing manufacturer. You have been seconded from the Company Secretary's office as acting management accountant while the current management accountant is on maternity leave.

(a) Bruegowns plc has three established products: 'Bruejeans' (a branded product), cotton jackets and waistcoats. Standard revenue and cost data for the three products are:

Product	'Bruejeans'	Cotton jackets	Waistcoats
	£ per pair	£ each	£ each
Selling price to retailers	18	24	12
Materials	4	8	2
Direct labour	5	9	3

Normal monthly sales to retailers are:

Product	'Bruejeans'	Cotton jackets	Waistcoats
Sales quantity (units)	8,700	2,100	1,500

Bruegowns plc's fixed costs are £92,000 per month.

Mona Shah, Bruegowns plc's marketing manager, is expecting a downturn in sales in the near future. The downturn is likely to affect all products equally. Mona needs to identify the minimum viable sales level for Bruegowns plc's products.

REQUIRED:

Calculate the company's current breakeven revenue per month and the percentage margin of safety. *(6 marks)*

(b) Oscar Mgumbe, Bruegowns plc's procurement director, is proposing to pay Evan Lawrence, a fashion designer, a one-off fee of £15,000, plus a royalty of £9 per garment sold, for the right to use Evan's design for a linen jacket. Oscar estimates that materials cost per jacket will be £36. He expects direct labour costs to be £18 per jacket and the specific production set up costs to be £9,000. Oscar estimates sales to retailers will be 600 jackets, at a price of £108 each.

REQUIRED:

Calculate (to the nearest percentage point) the sensitivity of Oscar's proposal to errors in each of his figures, including Evan Lawrence's fee and royalty rate. *(7 marks)*

(c) Mona Shah has to decide whether to accept an order from Fashions Delanet for 3,000 shirts. The relevant details are:

- Fashions Delanet's price is £22,500 for the whole batch of 3,000 shirts.
- All materials will be supplied by Fashions Delanet.
- Bruegowns plc's direct labour costs are expected to be £4 per shirt.

*(Continued)*

- If the order is accepted it will be necessary to suspend production of 'Bruejeans' for a week. As a result, sales of 1,300 pairs of 'Bruejeans' will be lost.

REQUIRED:

Calculate the impact on profits if Mona accepts Fashions Delanet's order and recommend whether she should accept or reject the order. *(3 marks)*

- (d) Tony Fernandez has recently been appointed as Bruegowns plc's sales manager. Tony believes that it is possible to make savings by subcontracting some of Bruegowns plc's production to other manufacturers.

REQUIRED:

Write a memo to Tony explaining what short-term problems may occur if production is subcontracted. *(4 marks)*

*(Total: 20 marks)*

4. You work as the administration manager of Abutilon & Co, a firm of real estate agents that specialises in the sale of private houses. The firm has been in existence for three years.

Abutilon & Co's business operates as follows:

- A client asks Abutilon & Co to sell their house (the instruction).
- Abutilon & Co arranges a survey and valuation of the client's house and prepares marketing materials.
- Abutilon & Co arranges for advertisements to be placed in the appropriate media.
- Prospective purchasers contact Abutilon & Co and visit a selection of properties.
- Eventually a purchaser will be found for each property. This normally takes one month from the instruction date.
- The purchaser will then place a £1,000 non-returnable deposit with Abutilon & Co, as evidence of their intent to purchase.
- The purchaser will then take approximately one month to carry out legal checks on the property and arrange finance. At this point the purchaser is required to place a 10% deposit (less the £1,000 already deposited) with Abutilon & Co.
- One month later the deal is finalised. The purchaser now pays over the remaining 90% of the purchase price direct to the seller (not to Abutilon & Co). At the same time Abutilon & Co hands over the deposit to its client less a commission of 3% of the total purchase price.

In the jurisdiction within which Abutilon & Co operates it is not a legal requirement that real estate firms should deposit their clients' monies in a separate bank account. Therefore, Abutilon & Co uses the purchasers' deposits to fund its day-to-day operations.

*(Continued)*

- (i) The number of instructions Abutilon & Co receives rises in the spring and autumn and falls in the summer and winter. Actual and expected instructions for the period April 2004 to September 2004 are set out below:

Month	April	May	June	July	August	Sept
Actual instructions	100	80				
Expected instructions			40	60	80	100

- (ii) The average selling price per house during the period is expected to be £150,000.
- (iii) The survey and valuation of a client's house is carried out on the same day that an instruction is received. Abutilon & Co uses a separate firm of surveyors to carry out the surveys and valuations of its clients' houses. Each survey and valuation costs Abutilon & Co a flat fee of £300, which is payable immediately.
- (iv) Average marketing costs are £1,200 per house. Abutilon & Co pays its media suppliers for these costs in the month following instruction.
- (v) Fixed staff costs are £57,000 per month. In addition, a commission of 1% of each house's selling price is paid to Abutilon & Co's sales staff in the month that the deal is finalised.
- (vi) Stationery, motor expenses and other overheads average £17,000 per month. This figure includes a provision for depreciation of office fittings, furniture and equipment of £2,000 per month.
- (vii) The top floor of Abutilon & Co's office building has been let to a firm of accountants at a rent of £5,000 per month payable every three months, in January, April, July and October.
- (viii) Abutilon & Co is due to pay a tax bill of £90,000 in August 2004.
- (ix) At the end of June 2004 Abutilon & Co expects to have £215,000 in its bank account.
- (x) There is no VAT on Abutilon & Co's sales, commissions or costs.

Abutilon & Co's management committee have asked you to review the firm's short-term financial situation.

REQUIRED:

- (a) Calculate the average number of houses Abutilon & Co should sell per month to break even. *(4 marks)*
- (b) Prepare a cash budget for the months of July, August and September 2004. *(11 marks)*
- (c) Write a memo to the firm's management committee explaining the significance of the figures that you have obtained in parts (a) and (b). *(5 marks)*  
*(Total: 20 marks)*

5. Deyar plc manufactures portable industrial air-conditioning units. Deyar plc has contracted out the maintenance service for its air-conditioning units to Teps Ltd. Teps Ltd provides Deyar plc's customers with a routine annual service visit plus emergency callout visits to deal with any air-conditioning units that break down.

Teps Ltd's clients pay the same fee for an annual service visit or for an emergency callout. The budgeted fee for a service engineer visit in the year ending 31 December 2004 is £112.

Teps Ltd uses a standard costing system for planning and control purposes. Typical times and costs for an annual service visit, and for an emergency callout visit, are similar. Service engineers work from their own homes, and are paid a fixed hourly rate for each hour they work. Teps Ltd does not carry any stocks of materials or parts (other than those carried in the service engineers' vehicles), as these are obtained from Deyar plc as required. Teps Ltd leases its service engineers' vehicles, which are also maintained by the leasing company. Set out below is the standard cost card for a service engineer's visit to a client, for the year 2004.

Standard cost per service engineer visit (annual service or emergency callout)		
	Quantity per visit	Price or rate
Service engineer's hours	3.5	£12 per hour
Distance travelled	25 km	Fuel costs of £0.08 per km
Materials & parts	Varies	£40 average cost

Budgeted and actual fixed overheads for May 2004 were:

Activity	Budget (£)	Actual (£)
Chief executive and secretariat	7,500	8,400
Service control centre	3,600	3,250
Accounting and credit control	4,200	3,950
Leasing of service engineers' vehicles	4,750	5,300
Rent and other space costs	2,750	3,640

Actual quantities and direct costs in May 2004 were:

Service engineers worked	3,720 hours	£42,780 wage cost
Service engineers travelled	28,200 kilometres	£2,820 fuel cost
Materials & parts		£42,900 cost

Teps Ltd budgeted for 900 annual service visits and 100 emergency callouts in May 2004. The actual number of service visits was 950 and there were 150 emergency callouts. In April 2004 Deyar Ltd increased the cost of materials and parts supplied to Teps Ltd by 10%. At the same time Teps Ltd increased its fee for a service engineer visit by £5.

REQUIRED:

Prepare an operating statement for May 2004, which contains the:

- relevant quantitative data
- flexed budget revenues, direct and fixed costs for the month
- actual revenues, actual direct and actual fixed costs for the month
- total, price and efficiency variances, and the sales volume contribution variance.

*(Total: 20 marks)*

6. Mirandel plc designs and manufactures a range of office photocopiers. The company uses cost plus pricing to obtain the selling prices for its products. Lucas Tang, Mirandel plc's development director, has set up a team to evaluate proposed new products. Lucas has asked you, as a non-production person, to join this team to provide an alternative viewpoint. The first proposed product that the team has to review is a small portable photocopier designed for the consumer market.

- (a) Lucas has asked you to consider the feasibility of using target costing when evaluating new products.

REQUIRED:

Write a memo to Lucas and the remainder of the team that:

- (i) explains what target costing is;
- (ii) describes the target costing process;
- (iii) explains how the target cost and life-time profit for the new photocopier would be obtained, using imaginary figures. *(11 marks)*

- (b) Lucas also wants to use value analysis in future product reviews.

REQUIRED:

- (i) Describe the four aspects of value that Mirandel plc's product evaluation team managers should consider in the value analysis of the proposed photocopier. *(4 marks)*
- (ii) Suggest five questions that the product evaluation team could ask as part of their value analysis of the photocopier. *(5 marks)*

*(Total: 20 marks)*