

MANAGEMENT ACCOUNTING

FORMATION 2 EXAMINATION - AUGUST 2018

NOTES:

Section A - Questions 1 and 2 are compulsory. You have to answer Part A **or** Part B **only** of Question 2. Should you provide answers to both Part(s) A and B of Question 2, you must draw a clearly distinguishable line through the answer not to be marked. Otherwise, only the first answer to hand for this question will be marked.

Section B - You are required to answer any **three** out of Questions 3 to 6. Should you provide answers to all of Questions 3 to 6, you must draw a clearly distinguishable line through the answer not to be marked. Otherwise, only the first three answers to hand for these four questions will be marked.

TIME ALLOWED:

3 hours, plus 10 minutes to read the paper.

INSTRUCTIONS:

During the reading time you may write notes on the examination paper but you may not commence writing in your answer book. **Please read each Question carefully.**

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

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.

List on the cover of each answer booklet, in the space provided, the number of each question attempted.

NB: PLEASE ENSURE TO ENCLOSE YOUR ANSWER SHEET TO QUESTION 3 IN THE ENVELOPE PROVIDED.

MANAGEMENT ACCOUNTING

FORMATION 2 EXAMINATION - AUGUST 2018

Time allowed: 3 hours, plus 10 minutes to read the paper.

Section A: Answer Question 1 and either Part A or Part B of Question 2.

Section B: You are required to answer any three out of Questions 3 to 6.

SECTION A

1. HW DAC was formed five years ago in Sligo and produces a range of health products and supplements for the Irish and UK markets. The management accountant is busy preparing budgets for the period from January to March 2019 and is currently compiling pertinent information relating to one of the company's newest products: Eyz.

Eyz is a refreshing eye spray mist based on two key organic ingredients: mineral water and green tea extract. There is a simple manufacturing process and the product is manufactured in a 250ml size for everyday use. Details relating to this product are shown below.

1. Projected sales for the first quarter of 2019 are as follows:

	January	February	March
Sales in units (250ml bottles)	4,300	4,380	5,020

The selling price of Eyz is €3.10 per bottle.

2. At 1 January 2019, the company expects to have an opening inventory of 980 bottles of Eyz.

3. The costs incurred to produce one 250ml bottle of Eyz are shown in the table below:

	€
Materials	
Mineral water (225ml)	0.18
Green tea extract (25ml)	0.30
Recycled plastic 250ml bottle	0.10
Labour (0.06hr @ €10 per hour)	0.60
Variable production overhead	0.40
	<u>1.58</u>

The company has arranged to purchase top quality mineral water at a cost of €0.80 per litre and green tea extract at a cost of €12.00 per litre. These prices have been fixed from 2018-2020.

4. At 1 January 2019, the company expects to have 2,000 litres of mineral water and 1,000 litres of green tea extract in inventory. It also expects to have 1,000 250ml plastic bottles in inventory.

5. Projected closing inventory levels for the finished product and raw materials are as follows:

	End January	End February	End March
Eyz (250ml bottles)	1,000	1,500	2,000
Mineral water (litres)	2,108	3,010	4,108
Green tea extract (litres)	1,000	1,000	2,000
Recycled plastic bottles	1,000	1,500	2,000

REQUIREMENT:

- (a)** For the first three months of 2019:
- (i) Prepare a sales budget (in units and €). (2 marks)
 - (ii) Prepare a production budget in units. (4 marks)
 - (iii) Prepare a materials budget (in units and €) for each material. (9 marks)
 - (iv) Prepare a labour cost budget. (2 marks)
 - (v) Prepare a variable production overhead cost budget. (2 marks)
- (b)** Prepare a budgeted income statement for the first quarter of 2019 based on your calculations in (i) to (v) above. (4 marks)
- (c)** Briefly outline TWO reasons why a company should prepare budgets. (2 marks)

[Total: 25 Marks]

ANSWER PART (A) OR PART (B)

2.

- (A)** You are a newly qualified Certified Public Accountant in the firm of Kyle & Co and have been asked by a senior manager to provide assistance to a new client. The client has asked for information about standard costing; specifically the different types of standard costs and how standard costs are established. You have agreed to prepare a briefing note that will address these matters.

REQUIREMENT:

Prepare a briefing note that:

- (a)** Describes the different types of standard costs and their suitability for use in a company. (6 marks)
- (b)** Briefly explains two approaches to establish standard costs, including the advantages and disadvantages of each approach. (6 marks)
- (c)** Outlines TWO limitations of standard costing. (2 marks)

Format and Presentation (1 mark)

[Total: 15 Marks]

OR

- (B)** Peter Fahy is the managing director of PF Components DAC, a recently established manufacturing company based in Kerry. He recently approached your firm, Farrell & Brennan, Certified Public Accountants, seeking advice in relation to inventory valuation and just-in-time (JIT) inventory management. Peter understands the importance of efficient inventory management in a manufacturing environment.

REQUIREMENT:

Draft a memorandum for Peter Fahy, managing director of PF Components DAC, that addresses the following issues:

- (a)** For each inventory valuation approach (FIFO, LIFO and Average Cost):
 - Describes the main features of the approach, (6 marks)
 - Explains the effect of the approach on profit and on closing inventory valuation during periods of rising prices. (3 marks)
- (b)** Outlines how just in time (JIT) inventory management operates and lists TWO advantages and TWO disadvantages of this approach. (5 marks)

Format and Presentation (1 mark)

[Total: 15 Marks]

SECTION B - ANSWER ANY THREE QUESTIONS.

3. The following multiple-choice question contains eight sections, each of which is followed by a choice of answers. Only one answer is correct in each case. Each question carries equal marks. On the answer sheet provided indicate for each question, which of the options you think is the correct answer. Marks will not be awarded where you select more than one answer for any question.

1. Which of the following would be classified as a direct labour cost?
- (a) A bricklayer's wages in a construction company.
 - (b) The wages of the general manager in a hardware store.
 - (c) The salary of the maintenance manager in a company manufacturing cameras.
 - (d) The salary of the human resources manager in a car sales company.

The following information relates to Questions 2 and 3:

The process account shown below relates to the month of August and closing work in progress (WIP) is 50% complete.

Process Account				
	Units	€		Units €
Opening WIP	542	24,000	Output	578
Period costs	60	4,910	Closing WIP	24
	<u>602</u>	<u>28,910</u>		<u>602</u>

The company uses the weighted average (average cost) method of process costing.

2. The value of the closing WIP for the month of August is:
- (a) €588
 - (b) €1,153
 - (c) €1,176
 - (d) €976
3. The value of output for the month of August is:
- (a) €27,757
 - (b) €28,853
 - (c) €28,322
 - (d) €27,934
4. Which of the following differences between financial accounting and management accounting is INCORRECT?
- (a) There is no legal requirement for management accounting information to be produced.
 - (b) Management accounting reports must be produced on a monthly basis.
 - (c) Financial accounting information primarily focuses on past information.
 - (d) Financial accounting reports present summarised financial information for the business based on company law and financial reporting standards.
5. XY DAC charges a selling price of €200 for one of its products and the product cost per unit is €80.
- In relation to this product, which of the following statements is CORRECT?
- (a) The gross profit margin is 150% and the mark-up is 60%.
 - (b) The gross profit margin and mark-up are the same.
 - (c) The gross profit margin is 60% and the mark-up is 150%.
 - (d) There is not enough information given to calculate the gross profit margin and the mark-up.

6. AB DAC recorded the following information relating to its production activity:

Month	January	June	July
Machine hours	16,000	18,000	20,000
Production overhead cost	€346,000	€380,000	€414,000

The fixed production overhead cost per month is:

- (a) €74,000
- (b) €34,000
- (c) €68,000
- (d) €36,000

7. CD DAC makes and sells three products; details relating of each product is shown below:

	Product R Per Unit €	Product S Per Unit €	Product T Per Unit €
Direct labour (@ €12 per hour)	6.00	18.00	12.00
Direct material (@ €6 per kg)	9.00	7.50	12.00
Maximum demand per period (units)	760	1,040	480

Total labour hours per period are limited to 2,600 and the supply of material is limited to 2,900 kgs per period.

The company's limiting factor is:

- (a) Direct material.
- (b) Direct labour.
- (c) Both direct material and direct labour.
- (d) Neither direct material nor direct labour.

8. Ola DAC is pricing a one-off contract. The contract requires 2,000 kgs of material X44, which the company no longer uses in its production process. Currently, Ola DAC has 1,000 kgs of this material in inventory, which originally cost €3,000 and which could be sold for a scrap value of €1.50 per kg. If the company wants to buy a new supply of material X44 the current replacement cost is €2.80 per kg.

The relevant cost of material X44 to include in the contract is:

- (a) €2,800
- (b) €4,500
- (c) €5,800
- (d) €4,300

[Total: 20 Marks]

4. Sceneit DAC, based in Dublin, offers a range of sightseeing tours to tourists in the summer season. This year the company has developed two new tours, Magical Newgrange and Wicklow Wonders. However, due to budget constraints the company can only afford to offer one of the new tours to tourists. The management accountant has collated the costing details of each of the tours, including a proposed selling price, and these are shown below. In addition, the company's sales staff has conducted some market research to try to estimate the popularity and demand for each of the tours. This information is also provided below.

<i>Cost information</i>	Magical Newgrange	Wicklow Wonders
Driver and guide wages (per day)	€185	€185
Insurance cost (per day)	€12	€16.40
Entrance price to attractions per person (see Note 1)	€10	€16
Refreshments per person (see Note 2)	€12.50	€15.80
Kilometres travelled (See Note 3)	130	120
Bus hire costs (see Note 3)	€50	€50
Selling price of tour (per person)	€50	€56

<i>Market research information</i>	Magical Newgrange	Wicklow Wonders
Average (expected) number of persons per tour	48	55

Notes:

1. The selling price of each tour includes the entrance ticket to the various attractions. For Magical Newgrange the entrance ticket relates to the heritage centre. For Wicklow Wonders the entrance ticket relates to Powerscourt House and Gardens. Sceneit DAC has negotiated a deal (with the Newgrange heritage centre and Powerscourt House and Gardens) whereby if there are 40 or more customers on the tour, the entrance price to the attraction is reduced by €1.00 per person for all tickets.
2. Sceneit DAC has arranged morning coffee and lunch for each person taking the tour. This cost is only payable for customers taking the tour and is included in the selling price of the tour.
3. The tour buses are hired from Busy Buses DAC based in Dublin and can accommodate a maximum of 56 customers per tour. The bus hire cost is €50 per day plus €0.95 per kilometre travelled.

REQUIREMENT:

(a) For EACH tour:

- (i) Calculate the breakeven point in sales revenue. (8 marks)
- (ii) How many tours must be sold for the company to achieve a profit of €1,000 per day? (5 marks)
- (iii) Calculate the margin of safety in percentages, assuming tour sales achieved are equal to the average (expected) number of tour sales. (3 marks)

(b) Recommend which tour Sceneit DAC should choose for the summer season, giving relevant reasons to support your answer. (2 marks)

(c) Outline TWO assumptions of Cost-Volume-Profit analysis. (2 marks)

[Total: 20 Marks]

5. Enlighten DAC was established two years ago and produces a wide range of candles, for the hotel and leisure industry. The company specialises in large scented candles that are popular in spas and beauty rooms throughout the country. Since its inception the company has used variable (marginal) costing as the basis for its management accounts. Due to its substantial growth over the past two years the company is required to have an external audit conducted for the financial year to 31 December 2018. During preliminary discussions the audit partner suggested that it would be much simpler and more appropriate for the company to use absorption costing rather than variable (marginal) costing. However, the managing director of Enlighten DAC was concerned, stating that she was, 'not really sure how it will affect our bottom line.'

Management accounts for the Spa Tranquillity candle for the month of July, prepared using variable (marginal) costing, are shown below:

	€	€
Sales (see Note 1)		53,125
Cost of sales:		
Opening inventory (See Note 2)	2,240	
Production	<u>33,600</u>	
	35,840	
Closing inventory	<u>(840)</u>	
Cost of goods sold		<u>35,000</u>
Contribution		18,125
Fixed costs		
- Production overheads (see Note 3)		7,650
- Selling and administrative overheads		<u>2,500</u>
Profit		<u>7,975</u>

Notes:

- Spa Tranquillity candles have a selling price of €4.25 each.
- At 1 July, the company had 800 Spa Tranquillity candles in inventory.
- The variable (marginal) cost per candle has remained at the same level since the company began operating.
- Total fixed production overheads are budgeted to be €91,800 for this product for the year.
- The audit partner has suggested that fixed production overheads may be absorbed into production using budgeted production in units. Total budgeted production for the year is 108,000 units to be split equally over the twelve month period.
- Assume that actual fixed production overheads are equal to budget for July.

REQUIREMENT:

- Calculate the product cost of one Spa Tranquillity candle based on absorption costing. (3 marks)
- Prepare an income statement for the Spa Tranquillity candle for the month of July using absorption costing. (12 marks)
- Reconcile the profit using variable (marginal) costing with the profit calculated using absorption costing at (b) above. (3 marks)
- Briefly outline TWO reasons why a company may prefer to use absorption costing rather than variable (marginal) costing. (2 marks)

[Total: 20 Marks]

6. SC Tables DAC was established in Dublin in 1999 and produces a range of side tables and coffee tables. The manufacturing facility comprises four departments. It has two production departments, cutting and assembly and two service departments, stores and machine maintenance. SC Tables DAC operates a traditional absorption system to assign overhead to products.

Budgeted cost information for the month is shown below.

	Total	Cutting	Assembly	Stores	Machine maintenance
	€	€	€	€	€
Direct labour	108,000	32,400	54,000	10,800	10,800
Indirect labour	24,500	1,960	17,150	2,940	2,450
Power	19,240				
Building insurance	2,100				
Factory security	1,680				
Equipment depreciation	6,100				
Factory rent	7,980				
Supervision	14,700				

Details relating to the budgeted activity for the month are as follows:

	Total	Cutting	Assembly	Stores	Machine maintenance
Labour hours	8,000	2,400	4,000	800	800
Floor area (square metres)	4,200	1,680	1,680	630	210
Kilowatt hours (% usage)	100	65	20	5	10
Net book value of equipment	€366,000	€219,600	€54,900	€36,600	€54,900
Number of employees	15	4	7	2	2
Machine hours	10,500	7,350	3,150		
Value of stores issues	56,280	42,210	14,070		

REQUIREMENT:

- (a) On the basis of the information provided above, prepare a schedule of the total budgeted overheads for each of the four departments, clearly showing the basis of apportionment. (8 marks)
- (b) Calculate the total budgeted overheads for both production departments after the service departments have been re-apportioned to them. (3 marks)
- (c) Compute the pre-determined overhead absorption rates for each of the production departments. (4 marks)
- (d) At the end of the month the following information was obtained:

	Cutting	Assembly
Actual production overhead costs	€39,015	€36,825
Actual machine hours recorded	7,090	1,580
Actual labour hours worked	3,150	3,940

Calculate the under or over-absorbed production overhead for the cutting and assembly departments. (5 marks)

[Total: 20 Marks]

END OF PAPER

SUGGESTED SOLUTIONS

THE INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS IN IRELAND

MANAGEMENT ACCOUNTING

FORMATION 2 EXAMINATION - AUGUST 2018

SOLUTION 1

(a)

Marks

(i) Sales budget

	January €	February €	March €	Total €
Sales (@ €3.10 per bottle)	13,330	13,578	15,562	42,470

2

(ii) Production Budget in units (250ml bottles)

	January	February	March
Sales	4,300	4,380	5,020
Closing inventory	1,000	1,500	2,000
	5,300	5,880	7,020
Less opening inventory	980	1,000	1,500
Production required in 250ml bottles	4,320	4,880	5,520
Production required in litres	1,080	1,220	1,380

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(iii) Materials Purchase Budget

Each 250ml bottle contains 225ml or 90% mineral water and 25ml or 10% green tea extract

<u>Mineral water</u>	January	February	March
Production in litres	1,080	1,220	1,380
Mineral water required per 250ml bottle i.e 90%	972	1,098	1,242
Closing inventory	2,108	3,010	4,108
	3,080	4,108	5,350
Less opening inventory	2,000	2,108	3,010
Purchases required	1,080	2,000	2,340
Cost @ €0.80 per litre	€ 0.80	€ 0.80	€ 0.80
Total Cost	€ 864	€ 1,600	€ 1,872

Total mineral water purchases € 4,336

<u>Green tea extract</u>	January	February	March
Production in litres	1,080	1,220	1,380
Green tea extract per 250ml bottle i.e 10%	108	122	138
Closing inventory	1,000	1,000	2,000
	1,108	1,122	2,138
Less opening inventory	1,000	1,000	1,000
Purchases required	108	122	1,138
Cost @ €12 per litre	€ 12.00	€ 12.00	€ 12.00
Total Cost	€ 1,296	€ 1,464	€ 13,656

Total green tea extract purchases € 16,416

<u>Recycled plastic bottles</u>	January	February	March
Production in 250ml bottles	4,320	4,880	5,520
Closing inventory	1,000	1,500	2,000
	5,320	6,380	7,520
Less opening inventory	1,000	1,000	1,500
Purchases required	4,320	5,380	6,020
Cost @ €0.10 per bottle	€ 0.10	€ 0.10	€ 0.10
Total Cost	€ 432	€ 538	€ 602

Total recycled plastic bottle purchases € 1,572

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(iv) Labour cost budget

	January	February	March	
Production in 250ml bottles	4,320	4,880	5,520	
Cost to produce each bottle €0.60	€ 0.60	€ 0.60	€ 0.60	2
Production labour cost	€ 2,592	€ 2,928	€ 3,312	
Total production labour cost	€ 8,832			

(v) Variable overhead budget

	January	February	March	
Production in 250ml bottles	4,320	4,880	5,520	
Cost to produce each bottle €0.40	€ 0.40	€ 0.40	€ 0.40	2
Variable overhead cost	€ 1,728	€ 1,952	€ 2,208	
Total variable overhead cost	€ 5,888			

(b) Income statement

Sales		€ 42,470	
Cost of Sales			
Opening Inventory	note 1	€ 15,248	
Production Cost	note 2	€ 37,044	4
		€ 52,292	
-Closing Inventory	note 3	€ 30,646	
Cost of sales		€ 21,646	
Gross Profit		€ 20,824	

Note 1

Opening Inventory	Quantity	Cost	Value
Eyz	980	€ 1.58	€ 1,548
Mineral water	2,000	€ 0.80	€ 1,600
Green tea extract	1,000	€ 12.00	€ 12,000
Recycled plastic bottles	1,000	€ 0.10	€ 100
			€ 15,248

Note 2

Production Cost	
Mineral water	€ 4,336
Green tea extract	€ 16,416
Recycled plastic bottles	€ 1,572
Labour	€ 8,832
Variable overheads	€ 5,888
	€ 37,044

Note 3

Closing Inventory	Quantity	Cost	Value
Eyz	2,000	€ 1.58	€ 3,160
Mineral water	4,108	€ 0.80	€ 3,286
Green tea extract	2,000	€ 12.00	€ 24,000
Recycled plastic bottles	2,000	€ 0.10	€ 200
			€ 30,646

(c) Briefly outline reasons why a company should prepare budgets

Any TWO of the following:

- *Agreed targets*: budgets establish targets for all aspects of an organisation's operations.
- *Identification of problems*: budget preparation facilitates examination of all aspects of a business and may identify any factors that prevent an organisation from achieving its objectives.
- *Identifies possible improvements*: budgets identify any areas that may be improved increasing effectiveness and efficiency.
- *Improves co-ordination*: preparation of budgets requires managers to combine their plans and objectives with those of other managers and this ensures that each plan fits with the company's overall objectives.
- *Control*: once prepared budgeted figures are compared with actual results and a variance is extracted. The reasons for this variance are then investigated so as to make necessary corrections and control the company's operations.
- *Improves communication*: in preparing budgets the organisation must ensure that it communicates effectively with all those involved in the budget process. In addition, those preparing the budgets must communicate well with others involved in the process to ensure that a realistic but challenging budget is produced.
- *Assists in evaluation of managers*: budgets are often used to assess the performance of managers in achieving the budgeted outcomes.
- Any other relevant point.

Total

25

SOLUTION 2

(A)

BRIEFING NOTE

(a) Different types of standard costs and their suitability for a company to use

There are three main categories of standard costs, basic standard costs, ideal standard costs and currently attainable standard costs.

Basic standard costs: these are standard costs that do not change over many years. The advantage of this type of standard cost is that it provides a base for comparison with actual cost over a period of years. However, there may be changes in prices, methods of production or other factors so that basic standard costs are not useful as they do not represent current costs; they do not accurately represent what the organisation expects to achieve now.

Ideal standard costs: these standard costs represent perfect performance. They assume 100% efficiency, that there are no losses or idle time. They represent the minimum costs that are possible under the most efficient operating conditions. Ideal standard costs are not generally used in practice as they are likely to have a demotivational effect on staff. However, the company may set ideal standard costs as goals to aim for rather than performance that must be attained. By doing this it is possible that the company's performance level will improve over time and it will become more efficient and more competitive.

Currently attainable standard costs: these are standard costs that should be attainable under efficient operating conditions. These standards incorporate the possibility of machine breakdowns, normal wastage and lost time. Currently attainable standards should be tough but realistic. They should be tough so that staff will have to work hard to achieve the standards but they also must be realistic because if not staff will not be motivated to work hard. Currently attainable standard costs are the most suitable for companies to use. They provide information for planning and control purposes.

(6 marks)

(b) Approaches used to establish standard costs including advantages and disadvantages

In general there are two approaches that may be used when establishing standard costs, historical records and engineering studies.

Historical records: with this approach past records of the company's operations, purchase and use of materials and labour serve as a basis for establishing current standards. This approach is often used in practice.

The advantages of this approach are that it is relatively inexpensive; it uses actual company data to compute standard costs and provides a reference for future improvement.

The disadvantages of using past historical records are that there is the possibility that past inefficiencies will be incorporated in the standard costs; if the production process changes the historical data will be irrelevant and if the company introduces new products then using this approach to develop cost standards will not be possible.

Engineering studies: this approach requires a detailed study of each production operation to be conducted so that standard costs are based on observed recorded activity. Engineering studies may also require input from operating personnel to provide estimates about future activities and consumption levels.

The advantages of this approach are that it is future oriented; it aims to ensure that past inefficiencies are not incorporated in standard costs. In addition, this approach facilitates allowance for expected changes such as alterations to the production process or product redesign.

The disadvantages of this approach are that it is time consuming and expensive to employ. Engineering studies require a comprehensive team approach combining input from production, human resources, sales and finance staff. While such an approach may improve the reliability of cost estimates and increase commitment and motivation, there is the possibility of data bias to set easier to achieve standard costs.

(6 marks)

(c) Outlines TWO limitations of standard costing.

- Standard costing was developed when the business environment and operating conditions were more stable. The modern business environment is much more dynamic suggesting that standard costing may be less applicable.
- In the past it was considered satisfactory for performance to reach predetermined standard levels. This is not the case in today's challenging business environment, constant performance improvement is required to remain competitive.
- Past production processes were much more labour intensive and consequently labour standards and variances were in greater focus. However, significant changes to production processes have increased automation so that in many cases labour standards and variances are now less relevant.
- Any other relevant limitation.

(2 marks)

(Format and presentation 1 mark)

[Total: 15 marks]

(B)

MEMORANDUM

To: Mr Peter Fahy, managing director, PF Components DAC.

From: Trainee CPA

Subject: Inventory valuation and just in time inventory management

Date: August 2018

Further to your request for assistance, the information regarding the different approaches to inventory valuation and just in time inventory management is presented below. The first section outlines the main features of each inventory valuation approach. The second section explains the effect of each inventory approach on profit and closing inventory during periods of rising prices. The final section describes just in time inventory management, providing advantages and disadvantages of this system.

(a) The main features of each inventory valuation approach

First In First Out (FIFO):

- Assumes that materials purchased first are used first.
- FIFO seems most logical as it makes the same assumptions as the physical flow of materials through an organisation.
- In periods of inflation early purchases of material will have lower prices and will be issued first
- FIFO is accepted by accounting standards as a suitable method of valuing inventory
- Any other relevant point

Last In First Out (LIFO):

- Assumes that materials purchased last are used first
- With LIFO the latest purchases of material, which will (generally) have higher prices, will be issued first
- LIFO is NOT accepted by accounting standards as a suitable method of valuing inventory
- Any other relevant point

Average Cost (also called Weighted Average):

- Calculates an average cost for all materials purchased
- With Average Cost, material issues will be recorded at an average price based on purchases to date
- Average Cost is accepted by accounting standards as a suitable method of valuing inventory
- Any other relevant point

(6 marks)

The effect of each inventory valuation approach on profit and on closing inventory during periods of rising prices.

First In First Out (FIFO):

Cost of sales will be lower and profit will be higher than the other methods
Closing inventory will be valued at the latest (and highest) prices

Last In First Out (LIFO):

Cost of sales will be higher and profit will be lower than the other methods
Closing inventory will be valued at the earliest (and lower) prices

Average Cost (also called Weighted Average):

Cost of sales and profit will (generally) be in between the figures for FIFO and LIFO
Closing inventory will be valued at average prices

(3 marks)

(b) The operation of a just-in time (JIT) inventory management system including TWO advantages and TWO disadvantages

A JIT system refers to purchasing or production systems where goods arrive at a particular destination exactly when they are needed. In a full JIT system almost no inventory is held. JIT inventory management seeks to eliminate any waste arising from the production process as a result of using inventory. However, aside from carrying lower levels of inventory, JIT also involves working in ways that reduce or eliminate non-value added activities and practices.

Advantages of JIT

- Seeks to eliminate waste at all stages of the manufacturing process
- Builds a stronger relationship with suppliers
- Emphasises a high quality product and can help to reduce scrap, re-working and set up costs
- Facilitates a smooth flow of material and work throughout the production process
- Any other relevant point

Disadvantages of JIT

- There may be little flexibility or room for manoeuvre in the event of unforeseen delays
- Company may become too dependent on supplier(s) to deliver high quality goods on time
- Due to commitment to particular supplier(s), company may be unable to obtain the best prices for products
- Any other relevant point

(5 marks)

Format and presentation (1 mark)

[Total: 15 Marks]

SOLUTION 3

1. Answer (a) Bricklayer's wages in a construction company.

2. Answer (a) €588

Total costs incurred		€28,910 (x)
Total completed units	578	
Add equivalent units of closing WIP: 24 x 50%	<u>12</u>	
Total equivalent units of output		590 (y)
Cost per equivalent unit		€49 (x/y)
Value of closing WIP for August:	12 x €49 =	€588

3. Answer (c) €28,322

Cost per equivalent unit (calculated at 2. Above)		€49
Value of output for August	578 x €49 =	€28,322

4. Answer (b) Management accounting reports may be produced on a daily, weekly, monthly basis as required.

5. Answer (c) The gross profit margin is 60% and the mark-up is 150%.

Selling price	€200
Product cost	<u>€ 80</u>
Gross profit	€120

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Sales}} \times 100 = \frac{€120}{€200} \times 100 = 60\%$$

$$\text{Mark-up \%} = \frac{\text{Gross profit}}{\text{Product cost}} \times 100 = \frac{€120}{€80} \times 100 = 150\%$$

6. Answer (a) €74,000

		Machine hours	Overhead cost
High month of activity	July	20,000	€414,000
Low month of activity	January	<u>16,000</u>	<u>€346,000</u>
Difference		4,000	€ 68,000

$$\text{Variable production overhead cost} = €68,000 / 4,000 = €17 \text{ per machine hour}$$

$$\text{Fixed production overhead cost} = €414,000 - (20,000 \times €17) = €74,000$$

7. Answer (a) Direct material.

	Product R Per Unit	Product S Per Unit	Product T Per Unit
Direct labour (unit cost/labour rate per hour) (x)	0.5 hrs	1.5 hrs	1 hr
Maximum demand per period (units) (y)	760	1,040	480
Total labour hours required per product (x*y)	380 hrs	1,560 hrs	480 hrs
Total labour hours required		2,420 hrs	
Total labour hours available		2,600 hrs	
'=> Not limiting factor			
Direct material (unit cost/material cost per kg) (x)	1.5 kgs	1.25 kgs	2 kgs
Maximum demand per period (units) (y)	760	1,040	480
Total material required per product (x*y)	1,140 kgs	1,300 kgs	960 kgs
Total material required		3,400 kgs	
Total material available		2,900 kgs	
'=> Material IS a limiting factor			

8. Answer **(d)** €4,300.

2,000 kgs of material X44 required - relevant cost:

1,000 kgs in inventory - scrap value = 1,000kgs x €1.50/kg =

€1,500

1,000 kgs to be purchased – replacement cost = 1,000kgs x €2.80/kg =

€2,800

Total amount to be included in contract for material X44

€4,300

[Total: 20 marks]

SOLUTION 4

Question 4: Sceneit DAC - Solution

Marks

(a)

(i) Break even point in sales revenue

Fixed costs

	Magical Newgrange €	Wicklow Wonders €
Driver and guide wages cost	185.0	185.00
Insurance cost per day	12.0	16.40
Bus hire costs - fixed rate	50.0	50.00
Bus hire costs - based on kilometres	123.5	114.00
Total fixed costs	370.50	365.40

Sales revenue per person	50.00	56.00
Less: variable costs		
Refreshments per person	12.50	15.80
Entrance to attraction per person (discounted rate)	9.00	15.00
Total variable costs	21.50	30.80

Contribution per person	28.50	25.20
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Contribution margin ratio(CMR) = Contribution/Sales =	0.57	0.45
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Break even point in sales revenue = $\frac{\text{Total fixed costs}}{\text{CMR}}$	€650.00	€812.00
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8

(ii) If a profit of €1,000 per day is required how many day trips must be sold?

$$\text{Target profit in units} = \frac{\text{Total fixed costs} + \text{Target profit}}{\text{Contribution per unit}}$$

$$\text{For Magical Newgrange} = \frac{€370.50 + €1,000}{€28.5} = 49 \text{ trips (rounded)}$$

$$\text{For Wicklow Wonders} = \frac{€365.40 + €1,000}{€25.20} = 55 \text{ trips (rounded)}$$

5

PROOF: Not required by question

	Magical Newgrange €	Wicklow Wonders €
Total revenue [49 x €50]/(55 x €56)	2,450.00	3,080.00
Less: total variable costs [49 x €21.50]/(55 x €30.80)	1,053.50	1,694.00
Total contribution	1,396.50	1,386.00
Less: total fixed costs (see (a) (i) above)	370.50	365.40
Profit (approximately €1,000)	1,026.00	1,020.60

(iii) Margin of safety in percentages

Assuming actual sales = expected sales

$$= \frac{\text{Expected Sales} - \text{Break Even sales}}{\text{Expected Sales}} \times 100$$

Average expected sales

$$= \text{expected no. of customers} \times \text{selling price per tour} =$$

Magical Newgrange	Wicklow Wonders
€2,400	€3,080

$$\text{Magical Newgrange} = \frac{€2,400 - €650}{€2,400} \times 100 = 72.9\%$$

$$\text{Wicklow Wonders} = \frac{€3,080 - €812}{€3,080} \times 100 = 73.6\%$$

3

(b) Recommend which option Sceneit DAC should choose giving reasons for your answer

Sceneit DAC should choose the Magical Newgrange tour because:

- It has a lower break even point
- It has a higher contribution to sales ratio
- It has has a high margin of safety based on expected sales at 72.9%

Any other relevant point

2

(c) Assumptions of CVP

Any TWO of the following:

- Volume is the only factor influencing cost
- Costs may be accurately classified into fixed costs and variable costs
- Selling price per unit remains constant
- Variable cost per unit remains constant
- If more than one product is sold, the sales mix is assumed to be constant
- Inventory is valued at variable cost of production or if not all units are sold in the period when they are produced
- The CVP analysis applies to the relevant range and short term horizon

2

Total

20

SOLUTION 5

Question 5 Enlighten DAC - Solution

Marks

(a) Calculation of product cost using absorption costing

	€	
Variable product cost *	2.80	
Fixed production overhead **	0.85	
Total product cost per unit (candle)	<u>3.65</u>	

3

Variable product cost

Opening inventory value = opening inventory in units x variable production cost per unit
 => variable production cost per unit = opening inventory value/opening inventory in units
 => variable production cost per unit * = €2,240/800 = €2.80

Fixed production overheads per year	€91,800
Normal production capacity per year	108,000
Fixed production overhead absorption rate per unit **	€0.85

Workings

	July units
W1 Calculation of changes in inventory	
Opening inventory	800
Production (€33,600/€2.80 (see above))	12,000
Total inventory available	<u>12,800</u>
Sales (€53,125/€4.25)	12,500
Closing inventory	<u>300</u>

W2 Calculation of Under/Over absorbed overhead

	July €
Actual fixed production overhead	7,650
Absorbed fixed production overhead (12,000 units x .85)	<u>10,200</u>
Over absorbed overhead	<u>-2,550</u>

(b) Income statement for Enlighten DAC for the month of July Using Absorption costing - Product Cost = 3.65

		July €
Sales		53,125
Cost of Sales:		
Opening Inventory	(800 x 3.65)	2,920
+ Production	(12,000 x 3.65)	43,800
- Closing Inventory (see W1)	(300 x 3.65)	<u>-1,095</u>
		45,625
Over absorbed overhead (see W2)		<u>-2,550</u>
Gross profit		10,050
Selling and administrative overheads		<u>2,500</u>
Profit		<u>7,550</u>

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(c) Reconciliation of Absorption and Variable costing profit figures

	€
Profit per variable costing	7,975
Adjustment for fixed production overhead absorbed in inventory (800 - 300) * €0.85	<u>-425</u>
Profit per absorption costing	<u>7,550</u>

3

(d) Briefly outline TWO reasons why a company may prefer absorption costing to variable (marginal) costing

Any TWO of the following reasons:

- Financial accounting requires that absorption costing is used to cost products.
- Absorption costing avoids having to separate costs into their fixed and variable elements.
- Absorption costing does not underestimate the importance of fixed production overheads.
- By calculating and analysing under/over absorbed overheads in absorption costing, inefficient utilisation of resources may be revealed.
- Absorption or full costing is a better basis for calculating selling prices.
- Any other relevant point

2

20

SOLUTION 6

Question 6: Sidewayz DAC - Solution

a) Schedule of budgeted overheads

<u>Overhead expense</u>	<u>Basis</u>	<u>Total</u>	<u>Cutting</u>	<u>Assembly</u>	<u>Stores</u>	<u>Machine maintenance</u>
		€	€	€	€	€
Exclude direct labour	Not a production overhead					
Indirect labour	Given	24,500	1,960	17,150	2,940	2,450
Power	Kilowatt hours	19,240	12,506	3,848	962	1,924
Building insurance	Floor area	2,100	840	840	315	105
Factory security	Floor area	1,680	672	672	252	84
Equipment depreciation	Net book value of equipment	6,100	3,660	915	610	915
Factory rent	Floor area	7,980	3,192	3,192	1,197	399
Supervision	Number of employees	14,700	3,920	6,860	1,960	1,960
		<u>76,300</u>	<u>26,750</u>	<u>33,477</u>	<u>8,236</u>	<u>7,837</u>

8

b) Reapportionment of service departments

- Stores	Value of stores issues	6,177	2,059	-8,236	
		<u>32,927</u>	<u>35,536</u>	<u>0</u>	<u>7,837</u>
- Maintenance	Machine hours	5,486	2,351		-7,837
		<u>38,413</u>	<u>37,887</u>	<u>0</u>	<u>0</u>

3

c) Calculation of predetermined overhead rates

Machine hours	7,350	
Labour hours		4,000
Overhead absorption rate	<u>€5.23</u>	<u>€9.47</u>

4

d) Under/over absorption of production overhead

	<u>Cutting</u>	<u>Assembly</u>
	€	€
Actual production overhead cost	39,015	36,825
Absorbed production overhead cost		
- Cutting : 7,090 x €5.23	37,081	
- Assembly 3,940 x €9.47		37,312
Under/(Over) absorbed production overhead	<u>1,934</u>	<u>-487</u>

5

Total 20