

OLLSCOIL NA hÉIREANN, GAILLIMH
NATIONAL UNIVERSITY OF IRELAND, GALWAY

AUTUMN EXAMINATIONS, 2002

- B. Commerce Degree (Second Year)**
B. Commerce Degree with Language (Second Year)
B. Corporate Law (Third Year)
B.Sc. Information Technology (Third Year)

Management Accounting 1 - AY 207

- B. Management Engineering with Languages (Third Year)**
B. Industrial Engineering Examination (Fourth Year)

Management Accounting 1 - AY 201

Professor N. Garrod
Professor J. F. Collins
Ms. G. Robbins

Time allowed: TWO AND A HALF hours

Section A - Obligatory.

Multiple Choice - $33\frac{1}{3}$ marks

All questions carry equal marks

Answers must be filled in on computerised MCQ answer sheet

**After filling in your eight digit student number on MCQ answer sheet –
 place a zero in the final box**

Answer any TWO Questions from Section B

All questions carry equal marks

**Separate Answer Books must be used for
 each question in Section B**

Section A
Obligatory. Multiple Choice - 33¹/₃ marks
15 Questions - All questions carry equal marks
Answers must be filled in precisely on computerised answer sheet
Negative marking will NOT apply

1. A product required five quality tests before completion. The quality cost pool amounted to €72,000. Labour hours worked amounted to 6,000 and 18,000 quality tests were undertaken in the period. If the company are using an activity-based costing system, the amount relating to quality to be charged to one unit of the product is:
 - (a) €12
 - (b) €20
 - (c) €60
 - (d) € 4

2. Last year's budget was based on an activity of 400,000 units. Total cost was €600,000. 30% of costs were variable. This year management expect an increase in activity of 8%, variable costs to increase by 25% and fixed costs to decrease by 20%. The budgeted total cost will be:
 - (a) €747,000
 - (b) €625,324
 - (c) €579,000
 - (d) €680,000

3. The opportunity cost of making a component part in a factory with plenty excess capacity which has no alternative use for the excess capacity is:
 - (a) the variable manufacturing cost of the component
 - (b) the fixed manufacturing cost of the component
 - (c) both the variable and fixed manufacturing cost of the component
 - (d) none of the above

4. A joint product is:
 - (a) any product whose production process consists of several stages
 - (b) any product produced by a firm with more than one product line
 - (c) any product involved in a make or buy decision
 - (d) one of several products produced from a common input

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The following information is to be used for Questions 5, 6 and 7

Next year, Goma Glue Company expects to sell 25,000 gallons of glue. On this basis, the fixed costs per unit have been estimated to be €4.50.

Estimated sales.....€300,000

Estimated variable expenses.....€175,000

5. What is Goma's breakeven sales revenue point next year?
- (a) €125,000
 - (b) €112,500
 - (c) €270,000
 - (d) €475,000
6. How many gallons of glue would Goma have to sell next year in order to achieve a projected net profit of €100,000?
- (a) 80,000 gallons
 - (b) 25,000 gallons
 - (c) 42,500 gallons
 - (d) 57,500 gallons
7. Assume that Goma wants to sell 25,000 gallons next year. What minimum selling price would Goma have to charge for each gallon in order to obtain a projected net profit of €75,000?
- (a) €30.00
 - (b) €10.00
 - (c) €12.00
 - (d) €14.50

Cont'd..

The following information is to be used for Questions 8 and 9

Carolina Ltd. is considering investing €80,000 in a machine which will provide equal benefit each year and which will have no value at the end of its useful life of four years. The total annual cost of operating the machine, including straight line depreciation, will be €35,000. The machine will generate gross revenue of €36,000 per annum. The company's cost of capital is 18%.

	Present Value Interest Factor	18%
Year 1	0.847	
Year 2	0.718	
Year 3	0.609	
Year 4	0.516	
Year 5	0.437	

8. Which of the following is the payback period for this proposal?

- (a) 2.222 years
- (b) 4.000 years
- (c) 3.809 years
- (d) none of the above

9. Which of the following is the net present value?

- (a) - €77,310
- (b) - €23,510
- (c) - €14,333
- (e) none of the above

10. Kentucky Ltd., a specialist in chemical refining, has limited time available on its hydrochem machines. Some details of the company's four main products are:

	Product A	Product B	Product C	Product D
Selling price per unit	€90	€120	€140	€60
Variable cost per unit	€30	€ 25	€ 90	€20
Fixed cost per unit	€ 8	€ 10	€ 14	€12
Hydro-chem machine hours per unit	5	15	6	8

In order to make the best use of the hydro-chem machine, which product should be ranked first in an optimum production plan?

- (a) Product A
- (b) Product B
- (c) Product C
- (d) Product D

Cont'd..

11. Analysis of Montana Ltd.'s catering service suggests the following for next year:

<u>Total contribution</u>	<u>Probability</u>
€ 40,000,000	0.10
€ 60,000,000	0.15
€100,000,000	0.30
€130,000,000	0.30
€160,000,000	0.15

If the company's estimated total fixed costs are €60,000,000 next year, what is the probability of at least making a profit of €40,000?

- (a) 0.75
 (b) 0.25
 (c) 0.45
 (d) none of the above

The following information is to be used for Questions 12 and 13.

A company's total labour costs (fixed and variable) together with the associated output levels for the past four periods have been:

	<u>Total Overhead Cost (€)</u>	<u>Output (units)</u>
Month 1	€140,000	15,000
Month 2	€125,000	11,000
Month 3	€130,000	12,000
Month 4	€110,000	9,000

12. Using high-low analysis, what is the estimated variable labour cost per unit of output?
- (a) €3.75
 (b) €5.00
 (c) €6.67
 (d) €9.33
13. Using high-low analysis, what is the estimated fixed labour cost for the past four months?
- (a) €83,750
 (b) €65,000
 (c) €50,000
 (d) €42,500

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14. Ohio plc. has in stock a raw material which cost €6,000 to purchase some time ago. This material can be used on a special contract. It could also be sold for €4,500 or used as a substitute for another material which is used regularly by Ohio plc., thereby saving purchasing costs of €4,200. What is the relevant cost of using this material on the special contract?
- (a) €6,000
(b) €4,200
(c) €4,500
(d) €1,500
15. Alabama Ltd. absorbs overhead using a predetermined machine hour rate. Relevant information for the year just ended is:

Estimated machine hours	80,000
Actual machine hours worked	90,000
Estimated overhead cost	€320,000
Actual overhead cost	€330,000

What was the amount of over or underabsorbed overhead for the year?

- (a) €30,000 overabsorbed
(b) €40,000 overabsorbed
(c) €10,000 underabsorbed
(d) €10,000 overabsorbed

End of Multiple Choice

SECTION B
ANSWER TWO QUESTIONS FROM THIS SECTION

Separate Answer Books must be used for each question

Question 1

Malin Point Electronics Ltd. is a small specialist manufacturer of electronic components and much of its output is used by the makers of aircraft for both civil and military purposes. A large aircraft manufacturer has offered a contract to Malin Point Electronics Ltd. for the supply of 500 identical components over the next 12 months.

Data relating to production of one component is as follows:

<u>Materials</u>	
Material LX31K	3kg
Material RS31R	2kg
Part No. R604	
<u>Labour</u>	
Skilled labour	5 hours
Semi-skilled labour	4 hours
<u>Overhead</u>	
4 machine hours	

- (a) Material LX31K is in continuous use by the company. 1000kg are currently held in stock at a book value of €4.70 per kg, but it is known that future purchases will cost €6.00 per kg.
- (b) 2,400kg of material RS31R are held in stock. The original cost of this material was €4.00 per kg, but as the material has not been required for the last two years it has been written down to €1.00. Its scrap value is estimated at €1.50 per kg. The only foreseeable alternative use is as a substitute for material M14L (in current use), but this would involve further processing costs of €2.60 per kg. The current cost of material M14L is €5.60 per kg.
- (c) It is estimated that the Part No.R604 could be bought for €60 each.

Cont'd..

Question 1 cont'd..

- (d) An employee possessing the necessary skilled labour skills is available and is currently paid €5 per hour. He is, however, working on job LX214 which is earning a contribution of €6 per labour hour. A replacement worker could, however, be obtained at a rate of €4 per hour for the work which would otherwise be done by the skilled employee on job LX214.
- (e) The current rate for semi-skilled work is €3 per hour. Semi-skilled labour is in short supply. An additional employee could be appointed for this work, but would required to be paid overtime rates which amount to 150% of the normal semi-skilled labour rate.
- (f) Malin Point Electronics Ltd. absorbs overhead using a machine hour rate currently €20 per hour of which €8 is variable overhead and €12 fixed overhead. If this contract is undertaken it is estimated that fixed costs will increase for the duration of the contract by €4,000. Spare machine capacity is available and each component would require four machine hours.
- (g) A price of €180 per component has been suggested by the aircraft manufacturer.

You are required to:

- (i) State whether or not the contract should be accepted and support your conclusion with appropriate analysis of figures for presentation to management.
(27 Marks)
- (ii) Comment briefly on *three* factors which management ought to consider and which may influence their decision.
(6¹/₃ Marks)

Total: 33¹/₃ Marks

Question 2

The Howth Head Toy Co. Ltd., a medium-sized company, produces a single product in one of its overseas factories. For control purposes, a standard costing system was recently introduced and is now in operation.

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Question 2 cont'd..

The standards set for the month of April were as follows:

Production and sales	16,000 units
Selling price (per unit)	€140
Materials	
Material 007	6 kilos per unit at €8 per kilo
Material XL90	3 kilos per unit at €3.20 per kilo
Labour	4.5 hours per unit at €10.08 per hour
Overheads (all fixed) at €86,400	are not absorbed into product costs.

The actual data for the month of April was as follows:

	€	€
Sales (15,400 units)		2,125,200
Less cost of sales		
Material 007 (89,320kg)	732,424	
Materials XL90 (42,350kg)	130,438	
Labour (paid a rate of €10.58 per labour hour)	698,280	
Overheads	<u>98,640</u>	<u>1,659,782</u>
Actual profit		<u>465,418</u>

You are required to:

- calculate the standard variable cost and standard contribution of one unit of product
(3 Marks)
- calculate the budgeted profit for the month of April, showing clearly budgeted contribution
(4 Marks)
- prepare a detailed statement of the variances [materials (price and usage), labour (rate and efficiency), fixed overhead expenditure, sales price variance and sales volume variance,] which reconcile the budgeted profit with the actual profit for April.
(21 Marks)
- discuss possible reasons for interrelationships between material variances and labour variances.

(5¹/₃ Marks)

Total: 33¹/₃ Marks

Question 3

North Irish Sea Products (NISP) manufacture just one product, a well known high protein fish food called 'Fink', suitable for intensive fish farming in the North Sea. NISP has budgeted that output and sales of 'Fink' will be 25,000 units in 2003. At this level of activity, fixed costs are budgeted at €60 per case and budgeted variable costs per case are €45. NISP intends selling 'Fink' at €120 per case, at which price they expect to sell all cases produced. NISP's marketing manager has recently researched the market and estimates that demand for 'Fink' would increase by 1,000 cases for every decrease of €1 in selling price per case (and vice versa). It is possible to set intermediary selling prices pro-rata with changes in demand.

NISP's production manager has just received information from suppliers that materials (which are included and currently account for 70% of 'Finks' budgeted variable cost per case) are due to increase by 30%.

You are required to:

(a) calculate, **before cost increases**

- (i) the budgeted contribution and profit at the budgeted activity of 25,000 cases and selling price of €120 per case

(4 Marks)

and

- (ii) the level of sales and selling price at which profits would be maximised and the amount of those maximum profits, assuming the marketing managers research findings are correct.

(15 Marks)

(b) show whether and by how much NISP should adjust their optimal selling price, in respect of the increase in materials costs which has been indicated to the production manager.

(5 Marks)

(c) briefly discuss the advantages and disadvantages to the organisation associated with the use of cost-plus pricing and contribution margin pricing.

(9¹/₃ Marks)

Total: 33¹/₃ Marks