GD249

OLLSCOIL NA hÉIREANN, GAILLIMH
NATIONAL UNIVERSITY OF IRELAND, GALWAY

SUMMER EXAMINATIONS, 2000

B.E. DEGREE EXAMINATION IN CIVIL ENGINEERING
B.E. DEGREE EXAMINATION IN ELECTRONIC ENGINEERING
B.E. DEGREE EXAMINATION IN MECHANICAL ENGINEERING
B.E. DEGREE EXAMINATION IN INDUSTRIAL ENGINEERING
DIPLOMA IN QUALITY ASSURANCE EXAMINATION
FIRST SCIENCE (BIOTECHNOLOGY) EXAMINATION

INDUSTRIAL MANAGEMENT (MG319)

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Time Allowed: 3 Hours

Please answer **one** question from **Section A**; **two** questions from **Section B**; and **one** question from **Section C**. All questions carry equal marks.

USE SEPARATE ANSWER BOOKLETS FOR EACH SECTION.

Section A: Industrial Relations

1. Why do employees join trade unions? Discuss the benefits, to the employee, of joining a union. What concerns might management have about recognising a union?

2. In a dispute situation what is the standard 'protocol' in seeking a resolution? Describe one independent third party involved in dispute resolution outlining its role and functions.

3. Give an account of the legislation in relation to Unfair Dismissal. Include an evaluation of the extent to which you consider the legislation to be protective of the employee.

Section B – Accounting
(Answer TWO questions from this section)

Question 4

Superstore Ltd has been in business for several years. The company extracted the following trial balance, before adjustments, from its ledger on 31 December 1999.

	DR IR£	CR IR£
Bad Debts	800	
Provision for bad debts		500
Debtors	26,000	
Creditors		5,400
Stock at 1/1/99	3,900	
Purchases	121,000	
Share capital (£1 ordinary shares)		100,000
Share premium		30,000
Profit and loss account at 1/1/99		19,400
Dividend (paid 30/6/99)	6,800	
Bank		5,800
Buildings at cost	103,000	
Fixtures and fittings at cost	78,000	
Accumulated depreciation - Buildings		2,000
Accumulated depreciation – Fixtures and fittings		31,000
Rent and rates	16,900	
Salaries	41,400	
Sales		226,000
Insurance	5,900	
General expenses	16,400	
	420,100	420,100

The following adjustments have yet to be made:

i) Closing stock on 31 December 1999 amounted to £17,000.

ii) Rent of £5,400 was paid on 1 November 1999, in respect of the half-year to 30 April 2000.

iii) Rates of £3,900 was due but not paid on 31 December 1999.

Cont'd...

Question 4 cont'd...

iv) Depreciation is to be provided on the fixtures and fittings at the rate of 20% using the reducing balance method. The building is depreciated on a straight line basis over 40 years.

v) Additional bad debts of £2000 must be written off and the bad debt provision is to be made equal to 3% of the remaining debtors.

Required:

a) Prepare a trading and profit and loss account for the year ended 31 December 1999, together with a balance sheet at that date for Superstore Ltd.
(21 marks)

b) Outline briefly the key differences between a sole trader and a limited company.
(4 marks)

[Total: 25 marks)]

Question 5

Rexel Ltd is a leading manufacturer of steel fixtures. Its products are sold on both domestic and overseas markets. Due to the rapidly expanding construction industry in Ireland, demand for their products have increased.

The management accountant is presently anxious to establish the company's cash requirements for the four months June to September 2000 and has gathered the following financial details.

Sales achieved in 1999 were:

June	£80,000	September	£160,000
July	£140,000	October	£250,000
August	£200,000	November	£280,000

1. Sales volume in 2000 is expected to be 20% higher and to follow the same monthly pattern. The sales price will remain the same at £20 per unit. Proceeds are collected, on average, 40% in the month of sale and 60% in the following month.

   Debtors at 31 May 2000 are expected to be £80,000.

cont'd..

Question 5 cont'd..

2. The company's policy is to hold stocks of finished goods at the end of each month equal to 60% of estimated sales for the following month. Stocks of finished goods are expected to be 3,600 units at 31 May 2000.

3. Each unit manufactured requires 1 kilogram of raw material. Raw materials are purchased as required to meet production demand at £2 per kilogram.

4. Each unit of production will require 2 labour hours at a cost of £8 per hour.

5. Variable production overheads of £1 per unit of production will be incurred. Like labour costs, these are payable in the month of production. Fixed overheads are expected to be £516,000 for the year 2000. Apart from depreciation and other non-cash expenses amounting to £180,000, these are expected to be incurred and paid evenly throughout the year.

6. Machinery costing £70,000 will be delivered in October 2000 but Rexel Ltd. will have to pay £30,000 in July 2000 and the balance as cash-on-delivery.

7. Dividends to shareholders of 10p per share on the company's 20,000 shares will be paid in August 2000.

8. The bank overdraft is expected to be £70,000 on 31 May 2000.

Required:

a) Prepare a production budget and cash budget for Rexel Ltd for each of the four months June to September 2000.

(18 marks)

b) Discuss the benefits and problems which might arise from the budgeting exercise in an organisation.

(7 marks)

[Total: 25 marks]

Question 6

Verboten Ltd manufactures three products – Alpha, Beta and Gamma in its manufacturing plant. Cost and production details in relation to the most recent period are as follows:

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Question 6 cont'd..

	Quantity	Labour Cost per unit £	Material Cost per unit £	Machine hours per unit	Direct labour hours per unit
Alpha	5,000	5	2	1.00	2
Beta	12,000	7	5	0.50	5
Gamma	10,000	6	4	1.25	3

Total manufacturing overheads are analysed as follows:

	£
Machinery operating costs	475,000
Set-up costs	5,409
Material ordering costs	6,205
Material handling and storage costs	10,681
Machinery repair costs	52,705

The company currently charges overheads to products using a single absorption rate based on labour hours. The company's management accountant wishes to investigate how the activity-based costing approach might affect the product costs. The following activity pools have been identified concerning the recent production period:

Product	Number of set-ups	Number of material orders	Number of material movements	Number of repairs
Alpha	4	8	6	12
Beta	6	4	9	15
Gamma	2	5	7	13

Required:

a) Determine for each product the unit manufacturing cost

i) on a conventional costing basis, as currently employed by Verboten Ltd. **(7 marks)**

ii) on an activity-based costing (ABC) approach given the information available. **(12 marks)**

b) Discuss the benefits and problems involved in using ABC. **(6 marks)**

[Total: 25 marks]

Section C – Finance
(Answer ONE question from this section)

Question 7

Rochegate Ltd is considering the manufacture of a new chemical with a product life cycle of four years. They commissioned a feasibility study to investigate the practicalities of this project and have paid £20,000 for the report.

The main findings of the report are as follows:

1) The manufacture of the new chemical would involve the use of a machine which the company already owns. It was purchased several years ago for £95,000. The net book value of the machine is £55,000. The company has no alternative use for this machine, so if the new chemical is not manufactured, the machine will be sold immediately for £45,000.

2) Working capital of £80,000 would be required immediately for production to begin, with a further requirement for £15,000 at the end of the first year of operation.

3) Sales and production forecasts are as follows:

	Production units	Sales units
Year 1	600	500
Year 2	800	750
Year 3	1000	900
Year 4	900	800

4) Product costs are expected to comprise direct materials per unit of £40 and £30 direct labour per unit is to be manufactured. Variable production overheads are predicted to be £1000 for every 100 units manufactured.

5) The selling price per unit will be £200 in the first year but will fall to £170 in the following two years. In the final year of the products life, the selling price will fall to £110.

6) Fixed production costs (excluding depreciation) will be £35,000 per year. They include an allocation of £20,000 for fixed overheads.

It is estimated that the machine will have a residual value of £2,000 after four years.

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Question 7 cont'd

7) Marketing costs in years 1 and 2 would be incurred amounting to £10,000 and £12,000 respectively.

8) The firms cost of capital is 10% for new projects such as this. All cash flows are assumed to arise at the end of the year. The desired payback period for projects of this type is three years.

Required:

a) Calculate for this project:

i) the net present value
ii) the payback period to the nearest month

and recommend acceptance or otherwise of the project.

(20 marks)

b) Discuss the advantages and disadvantages (if any) of the two capital investment appraisal methods you have used above to assist with this capital investment decision.

(5 marks)

[Total: 25 marks]

Question 8

You are required to answer TWO of the following:

i) Orchard Ltd is considering whether it should accept a new sales contract:

a) Annual sales of £1m are expected.
b) 60 days credit would be allowed.
c) Orchard Ltd. has a contribution margin of 25% on sales.
d) All of Orchard Ltd's suppliers give 30 days credit.
e) Collection costs are expected to total £15,000.
f) Bad debts are estimated at 2%.
g) Stock held by the company will increase by £250,000.
h) The company's cost of capital is 10%.

Should Orchard Ltd accept the contract.

(12 ½ marks)

ii) Write brief notes on **each** of the following sources of finance.

i) Ordinary shares
ii) Preference shares
iii) Long-term loans

(12 ½ marks)

cont'd..

Question 8 cont'd..

iii) Discuss the hedging techniques available to a company to reduce its foreign exchange exposure (eg forward contracts, options, futures contracts).

(12 ½ marks)

iv) Executive Providers Ltd manufactures high quality travel bags and brief cases. It uses 600 yards of leather per annum. The company's current supplier charges £12 per yard. Annual inventory holding costs are 10% of inventory value. The cost of placing an order is estimated at £10.

Calculate the following:

a) The Economic order quality (E.O.Q)
b) The total annual cost of this E.O.Q policy.

(12 ½ marks)

[Total: 25 marks]