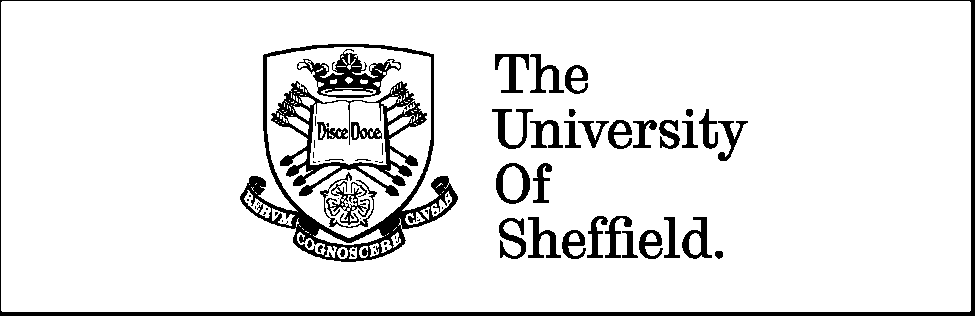
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**MGT388**

**MANAGEMENT SCHOOL Autumn Semester**

**Finance and Law for Engineers 1 Hour 30 minutes**

**Answer TWO questions only from three**

**All questions carry equal marks**

**Present value tables are attached**

**Questions start from page two onwards**

**Question One**

You are coming to the end of your engineering degree and plan to set up a business with three fellow graduates. As you are the only one who has studied accounting the others are drawing on your knowledge.

The business is to be set up as a limited company with each of you acquiring 10,000 £1 shares. In addition to this funding an extra £20,000 is needed to buy equipment and materials. The money can either be raised by each graduate obtaining a bank loan for £5,000 and then buying more shares in the company or the company obtaining a bank loan of £20,000.

Having done some initially calculations you estimate the business will achieve the following results:

Gross profit margin 28%

Operating profit margin 14%

Return on capital employed 21%

Asset turnover 1.5 times

**REQUIRED:**

1. As the business will be operating as a limited company an audited set of accounts will be required. Please explain to other three graduates:
2. What is an audit is and its purpose? **(5 marks)**
3. What a Statement of Financial Position is and the information it provides **(7 marks)**
4. What an income statement is and the information it provides

**(7 marks)**

1. From a personal point of view you would prefer the business takes out a loan for the extra £20,000 funds initially required. But you recognise this may make the business look a potential more risky to suppliers. Explain your position to the other three graduates. **(7 marks**)
2. Comment on the ratios that you have calculated. In particular explain what each ratio means, why the operating profit margin is much lower than gross profit margin, why you would expect a lower asset turnover figure for a new business rather than one that has been operating for some time. **(15 marks)**
3. Explain to the other graduates how the business can be profitable but you expect an overdraft of £4,700 at the end of the first year **(9 marks)**

**(Total 50 marks)**

**Question Two**

Comfortable Limited manufactures bean bags and floor cushions. The following represents estimated figures for the next year

Cushions Bean Bags

Units to be produced 8,000 6,500

Metres of fabric per unit 3 3.2

Direct material cost per metre £6.50 £5.60

Direct expenses per unit £6 £7.50

Labour hours per unit 1.5 2

Average wage rate per hour £11 £11

The production overheads for both products are rent and business rates £90,000 and electricity and other utility bills £42,000, (most of the electricity and utility costs relate to machine use). A repair and maintenance team serves both production departments.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Cushion Department | Beanbag Department | Service Department | Total |
| Area (square metres) | 1,500 | 1,300 | 200 | 3,000 |
| Value of plant (£’000) | 80 | 60 | 10 | 150 |
| Call outs | 1,200 | 1,000 |  | 2,200 |

**REQUIRED**

1. Define direct and indirect costs and state what is included in product a costs **( 8 marks)**
2. Calculate the prime cost of cushions and bean bags **(7 marks)**
3. Calculate the product cost of cushions and bean bags (to the nearest penny) (**15 marks)**
4. Suggest a price that could be charged for both cushions and bean bags. In your answer provide a justification for the price you suggest **(10 marks)**
5. Costing is one aspect of the job of the management accountant. Outline how a management accountant can help in the running of a company

**(10 marks)**

**(Total 50 Marks)**

**Question Three**

Pedal Power Ltd is a recently set up company specialising in the manufacture of Road bikes. The directors of Pedal Power Ltd are putting together a business plan for the purpose of obtaining a loan and have asked you to help them.

As part of the business plan the directors wish to demonstrate evidence of their profitability and that the business will be successful for a number of years. To help them in this you obtain the following information:

The variable costs of each bike are labour £45 and materials £70 with the fixed costs £42,000. The current sales price of a road bike is £165 and profits of £8,000 are expected.

The directors of Pedal Power Ltd are also considering two potential business ventures. The directors are only prepared to fund one of the investment opportunities.

Firstly, the company has been approached Sheffield University to supply town bikes together with storage facilities throughout the campus. The contract would be for 5 years and have an initial set up cost of £180,000, the cash inflows are then expected to be:

£

Year 1 80,000

Year 2 80,000

Year 3 40,000

Year 4 20,000

Year 5 20,000

Alternatively, the company could supply a new site in Sherwood Forest with mountain bikes. The initial costs for this venture would again be £180,000, with future cash flows expected to be:

Year 1 20,000

Year 2 50,000

Year 3 50,000

Year 4 72,000

Year 5 80,000

Pedal Power Ltd’s cost of capital is 8%

Required

1. Define break-even point and margin of safety, explaining why they are important **(9 marks)**
2. Calculate the break-even point and the current margin of safety for Pedal Power Ltd.  **(8 marks)**
3. Pedal Power Ltd has a possibility of expanding production by 200 bikes but this will mean fixed costs increasing by £12,000. Assuming Pedal Power does not want to reduce its profitability by how much will variable costs need to be reduced. **(6 marks)**
4. Explain why investment appraisal techniques apply discount factors

**(6 marks)**

1. For each project calculate the payback period and the net present value

**(16 marks)**

1. Advise the directors’ of Pedal Power as to which if any project should be accepted **(5 marks)**

**(Total 50 marks)**

