**Cost Accounting for Decision-making**

**Home Assignment**

Questions

**Question 1**

1. What is a relevant cost? (1 mark)
2. ‘All future costs are relevant costs’. Do you agree with the statement? Illustrate your answer with an example in the case of a factory. (5 marks)

 (Total: 6 marks)

Level of difficulty: \*

**Question 2**

Peter’s bicycle is broken and a repair cost of $300 is needed to make it runs again. At the same time, his friend, Hilary offers to sell him a used bicycle in good condition at a cost of $300. The following are the estimates made by Peter on the two bicycles:

|  |  |  |
| --- | --- | --- |
|  | Peter’s bicycle | Hilary’s bicycle |
|  | $ |  |  | $ |  |  |
| Purchase price | 3,500 |  |  | 300 |  |  |
| Repair cost | 300 |  |  | 0 |  |  |
| Annual operating costs | 160 |  |  | 120 |  |  |

Required:

1. Identify relevant cost(s) and irrelevant cost(s) from the above question and state the reason?

 (5 marks)

1. What is your advice to Peter? (3 marks)
2. What other factors that he should consider before making a final decision? (2 marks)

 (Total: 10 marks)

Level of difficulty: \*\*

**Question 3**

Fenny Company manufactures camera lens at its factory plant at Nanjing. An external supplier has made an offer to sell 20,000 units of ‘Len100’ to the company at a price of $25 per unit. The accounting department has provided the following estimated manufacturing costs of ‘Len100’:

|  |  |
| --- | --- |
|  | $ / per unit |
| Direct materials | 8 |
| Direct labor | 9 |
| Variable overheads | 5 |
| Fixed overheads | 4 |
| Total costs | 26 |

Required:

1. Should Fenny Company accept the offer if its factory plant at Nanjing has idle capacity now?

 (5 marks)

1. If the plant is in full capacity, what will be the maximum acceptable external purchase price if the company have to use other type of lens’ capacity with similar cost structure to manufacture ‘Len100’? (3 marks)

 (Total: 8 marks)

Level of difficulty: \*\*

**Question 4**

Jenny Company manufactures three components: A, B and C. Data collected for the coming year is shown below:

|  |  |  |  |
| --- | --- | --- | --- |
| **Component** |  **A** |  **B** |  **C** |
| Number of units produced | 15,000 | 30,000 | 60,000 |
| Production costs per unit | $ |  | $ |  | $ |  |
| Direct materials | 60 |  | 75 |  | 30 |  |
| Direct labor | 120 |  | 135 |  | 60 |  |
| Variable overhead | 30 |  | 45 |  | 15 |  |

Specific fixed overhead incurred from producing each type of the component will be:

|  |  |
| --- | --- |
|  |  $ |
| A | 15,000 |
| B | 75,000 |
| C | 90,000 |

General fixed overhead of producing all components will be $450,000.

An offer was received from an external supplier for the supply of all the components and the company had collected the following information for consideration:

1. The prices quoted by the external supplier were:

|  |  |  |
| --- | --- | --- |
| Component | $ / per unit |  |
| A |  90 |  |
| B |  315 |  |
| C |  150 |  |
|  |  |  |

1. Carriage inwards for the purchased component will be $1 per unit.
2. Indirect labor will be increased by $38,000 annually for receiving, inspecting and handling of all the purchased components.
3. General fixed cost of $280,000 can be avoided annually if the production of all the components is outsourced.

Required:

1. Prepare a statement to show the total costs if the company manufactures all the components.

(6 marks)

1. Prepare a statement to show the total costs if the company outsources all the components.

 (5 marks)

1. Referring to the calculations in (a) and (b), advise whether Jenny Company should outsource all the components. (3 marks)
2. If the company wants to maximize the profit, determine the most profitable decision by deciding which components should be manufactured and which should be outsourced. What is the total costs for your answer? (6 marks)

(e) Suggest TWO qualitative factors that the company needs to consider in deciding whether to manufacture or outsource. (5 marks)

 (Total: 25 marks)

Level of difficulty: \*\*\*

**Question 5**

William Coffee Cups manufactures a variety of coffee cups. The demand for the cups has kept increasing and the management foresees that the production line would not have enough capacity to satisfy the market. In the view of such, the company makes the following estimates for next year:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Product | Demand (units) | Price ($) | Direct materials ($) | Direct labor ($) |
| A | 8,000 |  | 15 |  | 4.5 |  | 6 |  |
| B | 10,000 |  | 18 |  | 3.5 |  | 8 |  |
| C | 24,000 |  | 10 |  | 2.5 |  | 4 |  |
| D | 125,000 |  | 4.5 |  | 0.8 |  | 1.6 |  |

Additional information:

1. The factory has a capacity of 10,000 direct labor hours per annum.
2. The direct labor rate is estimated at $40 per hour.
3. Total fixed cost per annum is $620,000.
4. Variable manufacturing overheads are $8 per direct labor hour.

Required:

1. Determine the contribution margin per direct labor hour for each product. (6 marks)
2. Calculate the number of units of each product that the company should produce to maximize the profit. (4 marks)
3. Determine the highest direct labor rate that the company would be willing to pay for additional capacity. (2 marks)
4. If the company does not want to loss sales, suggest some ways other than (c) for the company to meet the production quantity for the expected sales demand. (3 marks)

 (Total: 15 marks)

Level of difficulty: \*\*\*

**Question 6**

Shiny Company manufactures and sells a variety favour of chocolate bars. The average selling price and costs per box of chocolate bars are as follows:

|  |  |
| --- | --- |
|  | $ |
| Selling price | 36 |
| Costs incurred: |  |
|  Direct materials | (5) |
|  Direct labor | (7) |
|  Variable manufacturing overhead | (4) |
|  Variable selling expenses | (2) |
|  Fixed manufacturing overhead | (3) |
| Profit | 15 |

Chocolate bars are manufactured in batch sizes of 50 boxes. Each batch requires 6 machine hours to manufacture. The production capacity is 5,000 machine hours per month and the company only produces at 80% of its capacity.

A retail shop approaches Shiny to buy 6,000 boxes each month for three months. The shop requests Shiny to repack the box with new design that costs $1 per box. However, no variable selling expenses will be incurred for this order.

Required:

1. Does Shiny Company have enough capacity to accept this order? (3 marks)
2. Determine the minimum price per box that the company should charge for this order. (5 marks)
3. What other factors that the company should consider before making a final decision. (2 marks)

 (Total: 10 marks)

Level of difficulty: \*\*

**Question 7**

Harry Company manufactures and sells three models of speakers. The management considers dropping Model 003 from its product lines because it has been incurring losses over the past few years. The following is the segment income statement of last year:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Model 001 | Model 002 | Model 003 |  Total |
|  |  $’000 |  |  $’000 |  |  $’000 |  | $’000 |  |
| Sales | 800 |  | 400 |  | 300 |  | 1,500 |  |
| Less: Variable costs | 300 |  | 150 |  | 230 |  | 680 |  |
| Contribution margin | 500 |  | 250 |  | 70 |  | 820 |  |
| Less: Fixed costs: |  |  |  |  |  |  |  |  |
|  |  Factory rent | 50 |  | 20 |  | 30 |  | 100 |  |
|  |  Depreciation for factory machines | 15 |  | 16 |  | 20 |  | 51 |  |
|  |  Utilities expenses | 30 |  | 19 |  | 40 |  | 89 |  |
|  |  Maintenance expenses | 18 |  | 17 |  | 15 |  | 50 |  |
|  |  Wages and salaries | 25 |  | 24 |  | 28 |  | 77 |  |
|  |  Advertising expenses | 8 |  | 10 |  | 15 |  | 33 |  |
| Operating income / (loss) | 354 |  | 144 |  | (78) |  | 420 |  |

Additional information if Model 003 is dropped:

1. Factory rent and depreciation for factory machines will not be affected.
2. Total utility expense will be reduced by $50,000.
3. Wages and salaries for Model 003 can be eliminated.
4. Sales of Model 002 will be decreased by 5%.
5. One-third of total advertising expense will be saved.

Required:

1. Should Harry Company drop Model 003? (6 marks)
2. The management of the company believes that if advertising expense is to be increased by $32,000, the sales of Model 003 will be raised by 50%. Should the company drop Model 003 or increase the advertising expense for more sales? (6 marks)

 (Total: 12 marks)

Level of difficulty: \*\*\*

**Question 8**

Pleasure Company purchased a welding machine three years ago. The company wants to replace it with a new model. The following information relating to the two machines is available:

|  |  |  |
| --- | --- | --- |
|  | Old machine | New machine |
|  | $ | $ |
| Purchase cost | 150,000 |  | 170,000 |  |
| Remaining useful life | 5 years |  | 5 years |  |
| Current disposal value | 40,000 |  | - |  |
| Disposal value at the end of its useful life | 3,000 |  | 60,000 |  |

The company produces 160,000 units per annum. Annual operating costs, excluding depreciation, for the old and the new machine are $50,000 and $35,000 respectively. If the company uses the new machine in production, the defective rate will be reduced by 2%. The rework cost for the defected product is $0.5 per unit.

Required:

1. Should Pleasure Company replace the old machine with the new machine? (7 marks)
2. What cost should the company be considered as sunk cost when making this decision? (1 mark)
3. What other factors should the company consider before making a final decision. (2 marks)

 (Total: 10 marks)

Level of difficulty: \*\*

**Question 9**

Susan Inc. manufactures products C03 from processing one ton of cotton. Each ton of cotton can make 500 meters of C03 which can then be sold at $15 per meter in the market. The company can use these 500 meters of C03 for further processing into 450 meters of D04 at a total cost of $2,600 and a selling price of $23 per meter.

Required:

Should the company sell C03 at present or further process it to D04 if the production costs of $80,000 is allocated to produce C03.? (5 marks)

 (Total: 5 marks)

Level of difficulty: \*\*

**Question 10**

The sales manager of Stella Ltd. intended to tender for a one-off order from overseas. The costs associated with the project were as follows:

|  |  |
| --- | --- |
|  | $ |
| Material X | 50,000 |
| Material Y | 90,000 |
| Direct labor | 70,000 |
| Supervision  | 17,500 |
| Overheads  | 105,000 |
|  | 332,500 |

Additional information:

1. Material X was in stock and with no scrap value if re-sold. Material Y would have to be ordered at the cost shown above.
2. Direct labor costs of $70,000 was related to workers that would be transferred to this project from another project. In this connection, extra labor was needed to be recruited and transferred back to the other project at a cost of $80,000.
3. Supervision costs had been allocated to the project on the basis of 25% of direct labor costs and would be carried out by existing staff within their normal duties.
4. Overheads had been allocated to the project at the rate of 150% on direct labor.
5. The company was currently operating at its normal capacity.
6. The project would need the utilization of machinery that would have no other use to the company after the project had finished. The machinery would have to be purchased at a cost of $100,000 and then disposed of for $40,000 at the end of the project.
7. The sales manager knew that an oversea customer was prepared to pay up to a maximum of $250,000 for the project and a competitor was prepared to accept the order at that price. Regarding this, the production manager commented that the minimum price that the sales manager should charge was $350,000 given the above estimations plus the cost of the machine.

Required:

1. Calculate the contribution of the above project when the selling price is $350,000. (8 marks)
2. Advise the sales manager whether the company should go ahead with the tender for the project, state the reason. (2 marks)
3. If the sales manager finally decides to make the tender, should he take the advice from the production manager to charge $350,000 for the project? Why or why not? (6 marks)

(d) State other factors that should be taken into accounts before making the tender for this project.

(4 marks)

 (Total: 20 marks)

Level of difficulty: \*\*\*