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THE INSTITUTE OF CHARTERED ACCOUNTANTS OF PAKISTAN

**Final Examinations Summer 2004**

**June 07, 2004**

# MANAGEMENT ACCOUNTING

**(MARKS 100)**
**(3 hours)**

Q.1 Every month, NewHome Design uses 2,500 NHD parts to manufacture one of its products. The unit cost incurred to manufacture the NHD component are the following:

| | Rs. / unit |
|---|---|
| Direct materials | 850 |
| Direct labour | 1,350 |

Overhead costs are applied on the basis of direct labour cost. Overhead costs amount to Rs 6.5 million a month and consist of 40% fixed costs. The remaining costs are variable costs.

Last week, a vendor offered to partially make the NHD component at a price of Rs 2500. Buying this component will allow NewHome to avoid all direct material costs and decrease the direct labour and variable overhead costs by 70%.

**Required:**

(a) In 'make-or-buy' decisions, which costs are relevant? **(01)**

(b) Should NewHome purchase the component from the outside vendor if the capacity remains idle? Explain your decision. **(04)**

(c) What is the maximum price that the company would be willing to pay for the NHD component? **(02)**

(d) Suppose that there is an increase in demand and that the company can sell 5,000 products instead of 2,500. In this case, the company would need to lease a new machine for Rs 125,000 a month. If the company decides to make NHD with the leased machine, NewHome would be able decrease direct labour cost by 50%. Under these conditions, should NewHome make or buy the NHD component? Explain your decision. **(03)**

Q.2 Cool Breeze Ltd. manufactures air conditioning systems. The marketing department has suggested that there is a need in the industry for air conditioning systems for small enterprises. A market study has shown that customers would be willing to pay a price of Rs 45,000 per unit for such a product. The company earns a sales margin of 25%. The estimated production costs are Rs 37,500.

**Required:**

(a) Calculate the target profit on this product for 100 units. **(02)**

(b) Calculate the target cost for the production of 100 units of the new product. **(02)**

(c) Compare the target costs with estimated costs. With this information, state what action the company should take. **(02)**

(d) The cost controller of the company believes that target costing is no different from traditional costing. Explain the major differences between these costing

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Q.3 Fine Sports Ltd. makes sports shoes. It has two types in its range – South S[illegible] North Star. The South Star model uses traditional materials and has a high la[illegible] content. The North Star uses more advanced materials which might help playe[illegible] achieve more power, although many players find, or suspect, that accuracy suffers, which has impact on demand. Labour costs of the North Star model are lower because the new materials allow greater automation, although batch sizes are small.

Full budgeted cost structures are set out below:

| | South Star | North Star |
|---|---|---|
| Budgeted units | 50,000 | 10,000 |
| Material | 12 | 30 |
| Labour (Rs 4 / hr) | 32 | 20 |
| | 44 | 50 |
| Fixed overheads | 16 | 10 |
| Total absorption cost | 60 | 60 |
| Selling price | 75 | 75 |
| Profit | 15 | 15 |

Fixed overheads amounted to Rs 900,000 and are absorbed on a labour hour basis.

Actual results were as follows:

| | South Star | North Star |
|---|---|---|
| Actual sales units | 40,000 | 10,000 |
| Actual selling price | 73 | 85 |

The South Star model has come under great price pressure from foreign competitors. Fine Sports Ltd. believes its factory to be efficient and has become convinced that foreign firms are 'dumping' basic sports shoes in the market. Fine Sports Ltd. has dropped its price, but is reluctant to cut it any further because the gross margins would fall too far below the target 25% mark-up on cost.

Luckily for Fine Sports Ltd., the North Star model is proving very popular and some profits have been recouped by increasing its price. Customers did not complain about the price rises and even at higher price the sports shoes appear to offer good value for money. The result seems to be a high profit, low volume niche that competition don't seem to invade. Management assumes that the North Star model has a unique price / quality characteristic which is very attractive to the customer, although something of a mystery to Fine Sports.

The management accountant has recently read an article entitled 'Symptoms of a flawed costing system' which sets out three symptoms:

(i) Achieved gross margins not easily explained.
(ii) Customers do not object strongly when prices are increased.
(iii) What appear to be very high margin products are not attacked by our competitors. If the margins are so good, why isn't there more competition?

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The management accountant collates the following additional information:

| Budgeted | South Star | North Star |
|---|---|---|
| Number of production run set-ups | 20 | 100 |
| Number of deliveries | 50 | 100 |

| Fixed overhead break-down | Rupees |
|---|---|
| Machine / labour | 720,000 |
| Set-up costs | 120,000 |
| Delivery costs | 60,000 |
| | 900,000 |

**Required:**

(a) Show how the original fixed overhead amounts for the two models were obtained, then calculate the fixed overhead amounts which may be more appropriate. Using these, calculate the budgeted total absorption cost. **(10)**

(b) Comment on the actual results obtained by Fine Sports Ltd. in the light of these calculations. **(07)**

Q.4 The Star Corporation has just acquired a large account. As a result, it needs additional Rs 7.5 million in working capital immediately. It has been determined that there are three feasible sources of funds:

i. Trade credit: the company buys about Rs 5 million of materials per month on terms 1.5/30, net 90. Discounts are taken.
ii. Bank loan: the firm's bank lends Rs 10 million at 6.5%. A 10 percent compensating balance will be required, which otherwise would not be maintained by the company.
iii. A factor will buy company's receivables (Rs 10 million per month), which have a collection period of 60 days. The factor shall advance up to 75 percent of face value of the receivables at 6% on an annual basis. The factor shall also charge 1% fee on all receivables purchased. It has been estimated that the factor's services will save the company a credit department expense and bad-debt expense of Rs 0.08 million per month.

**Required:**
On the basis of annual percentage cost, which alternative should Star Corporation select? **(07)**

Q.5 The Sales Manager of Holders Ltd. is considering two new products, only one of which can be added to the firm's product line. Product X is a sure seller. It is certain that 20,000 units of product X (the firm's maximum capacity) can be manufactured and sold each month with a contribution margin of Rs 5 per unit. Product Y with a contribution margin of Rs 10 per unit is potentially more profitable. However, there is uncertainty about its marketability and following sales forecast has been prepared:

| *Sales of Y (units)* | *Probability* |
|---|---|
| 5,000 | 0.25 |
| 10,000 | 0.50 |
| 15,000 | 0.25 |

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**Required:**

The company invites your comments particularly on Risk neutral, Risk averse, and Risk seeker decision-makers with necessary calculations.

Q.6 MNO Company is running a poultry farm and currently has a flock of 25,000 six weeks old birds with an average weight of 1.30 kgs. This flock can gain further weight and can reach 1.60 kgs per bird in the next two weeks. It plans to purchase and grow another lot of one-day old chicks according to its full capacity either immediately or in 2-weeks time depending on the disposal of the present stock in hand.

(a) Following are some relevant information:

| | **Rs.** |
|---|---|
| Cost of chicks incurred | 275,000 |
| Feed and other cost incurred | 756,000 |
| Fixed costs (Rs. 25,000/week) | 150,000 |

(b) The rumour of bird flu spread in the market and affected the business in following ways:

| | |
|---|---|
| Cost of one day old chicks | Rs.5 per chick (No change in near future is expected) |
| Price of grown bird | Rs.28/kg |
| Feed and other cost per week per chick or bird | Rs.4 (No change in near future is expected) |

(c) Weight pattern of birds will be same as stated for existing flock.

(d) The probabilities of future prices of grown birds are:

| **Week from today** | **Price per kg (Rs)** | **Probability** |
|---|---|---|
| 2nd | 25 | 0.90 |
| | 35 | 0.05 |
| | 45 | 0.05 |
| 4th | 25 | 0.50 |
| | 35 | 0.40 |
| | 45 | 0.10 |
| 6th | 35 | 0.35 |
| | 45 | 0.40 |
| | 55 | 0.25 |
| 8th | 35 | 0.30 |
| | 45 | 0.45 |
| | 60 | 0.25 |

Thereafter a stable price of Rs.48/kg is expected.

(e) Mortality may be taken as 4% at the end of each two weeks.

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(f) Sales can be made only after the end of 6th or 8th week of bird age.

(g) Capacity of farm is 27,000 chicks flock.

**Required:**

Find the most profitable course of action from among the following four options:

(a) The existing stock is sold immediately and the new lot is sold:

(i) After 6 weeks.
(ii) After 8 weeks.

(b) The existing stock is sold after two weeks and the new lot is sold:

(i) After 6 weeks.
(ii) After 8 weeks. **(20)**

Q.7 PQR Company is budgeting a net after tax profit of Rs. 133,045 for the year 2003-04. Related estimates are as under:

| | |
|---|---|
| Production capacity | 80,000 unit |
| Sale price | Rs. 53 / unit |
| Direct material | Rs. 18 / unit |
| Direct labour | Rs. 7 / unit |
| Overhead expenses ( Variable ) | Rs. 3.41/ unit |
| Overhead expenses ( Fixed ) | Rs. 136,000 |
| Administrative and selling expenses | Rs. 497,454 |
| Commission on sales | 23% |
| Income tax rate | 41% |

The Manager Sales suggests that instead of paying 23% commission, the company may hire five salesmen on monthly salary of Rs. 13,750 per person. He is of the opinion that the target to earn desired net profit will be achieved easily by hiring the five salesman rather than by the commission-based sales.

**Required:**

As a management accountant, you are asked:
(a) To verify Manager Sales opinion. **(06)**
(b) Which option the company will select to achieve high level of Margin of Safety? **(06)**

Q.8 What are the assumptions and limitations of linear programming? **(07)**

Q.9 Division X, a division of the Group XYZ, manufactures a single product B. Division X's maximum capacity is 225,000 product B per year. It currently sells 210,000 B to external customers for Rs.48.95 per unit. This gives Division 'X' a contribution of Rs.19.50 per unit.

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Division Y, which is also part of the XYZ Group, but is in a different country [illegible] X, buys 60,000 units of B a year from a local company 'M' (not part of the Grou[illegible] at a local currency price equivalent to Rs.42.15 per unit.

It has been suggested that to maximize the Group's profit, Y should buy product B from X. As there are no marketing costs involved, X would set a transfer price of product B at Rs.44.85. This would give X the same contribution as an external sale, that is Rs.19.50 per unit. X would give Y's orders priority so some external orders could no longer be met.

**Required:**

Is it in the best interest of the Group for Division Y to continue to buy from company M, or switch to X if:

(a) The tax rate in the country where X operates is 40% and the tax rate in Y's country is 50%.

(b) The tax rate in the country where X operates is 55% and the tax rate in Y's country is 10%.

Assume that changes in the contribution can be used as basis for calculating changes in tax and that Y generates enough profit from other activities to absorb any tax benefits. **(10)**

**(THE END)**

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