



December 8, 2009

MANAGEMENT ACCOUNTING

(MARKS 100)

(3 hours)

Q.1 Zain Limited operates a production unit which produces a chemical which is commonly used in various industries. Following information has been collected to ascertain the company's working capital requirement:

- (i) Designed capacity of the plant is 150 tons per hour. However, as in the past, it is expected that the plant will operate at 70% of the designed capacity.
- (ii) The variable cost per ton of finished product would be Rs. 2,500 made up as under:

Raw materials	62.4%
Consumables and spares	12.0%
Other processing costs	25.6%

- (iii) Raw material is imported on FOB basis. The supplier allows 45 days credit from the date of shipment. However, overseas and inland transportation and port and customs formalities take 30 days.
- (iv) Because of the nature of the cargo, only one ship is available in a month, for transporting the raw material.
- (v) Freight, transportation and other import related variable costs of purchases are estimated at 30% of the FOB value and are paid at the time of receipt of goods at the plant.
- (vi) One ton of finished goods requires 1.25 tons of raw materials.
- (vii) Fixed costs are estimated at Rs. 10.584 million per month.
- (viii) Budgeted sales price is to be worked out so as to earn a gross profit of 20% over sales. The details of sales forecast provided by the marketing department are as follows:
 - 40% sales will be made to corporate clients on 10 days credit. The price would be 2% higher than the budgeted price.
 - 30% sales will be made to individual customers at budgeted price. The goods are delivered after two days of receiving the required amount.
 - Remaining sales shall comprise of exports. The export documents are presented in the bank within 2 days of shipment. The export proceeds are credited in the company's bank account after 3 days of the date of presenting the documents. The Federal government allows a rebate of 5% on exports and it is credited to the company's account on the date of realization of export proceeds.
- (ix) It is estimated that at any point of time the work in progress shall consist of 1,000 tons of raw material which shall be 50% complete as regards consumables, spares and processing costs.
- (x) Average inventory of finished product is equal to fifteen days production. Till last year, the company's policy was to maintain average inventory of 30 days.
- (xi) Operational consumables and spares of Rs. 20 million are required to be maintained throughout the year.
- (xii) Production is evenly distributed throughout the year. Except for the facts given above, all other costs are payable after 15 days of their incurrence.

Required:

Determine the working capital requirement for the year. (Assume 30 days in each month) (18)

(2)

Q.2 Adnan Limited is a manufacturer of specialized furniture and has recently introduced a new product. The production will commence on January 1, 2010. 200 workers have been trained to carry out the production. The complete unit will be produced by a single worker and it would take 40 hours to produce the first unit. The company expects a learning curve of 95% that will continue till the production of 64 units. Thereafter, average time taken for each unit will be 28 hours.

Each worker would work for an average of 174 hours each month. They will be paid @ Rs. 100 per hour. In addition, they will be paid a bonus equivalent to 10% of their earnings provided they work for at least three months during the year. The cost of material and overhead per unit has been budgeted at Rs. 10,000 and Rs. 4,000 per unit, respectively.

The company's workers are in high demand and it is estimated that 20% of the workers would leave by the end of March 2010 whereas a further 7 workers would retire on June 21, 2010. The management is confident that all the units produced would be sold.

Required:

Calculate the minimum price that the company should charge if it wants to earn gross profit margin of 20% on selling price during the year 2010.

(16)

Q.3 Wahid Limited established a plant to manufacture a single product ARIDE. Standard material costs for the first year of operations were as under:

Raw material	Standard Price per kg (Rs.)
A	6.40
B	4.85
C	5.90

All the raw materials were supplied at same prices throughout the first six months. Thereafter the prices were increased by 10%.

The company manufactured 1,320,000 units during the year ended 30 September, 2009. All purchases and the production were made evenly throughout the year.

Losses occurred at an even rate during the processing and are estimated at 12% of the input quantity. The standard weight of one unit of finished product is 11.88 kgs. The ratio of input quantities of materials A, B and C is 3:2:1 respectively.

Details of ending inventory are as under:

Raw material	Qty (kgs)	Value under FIFO method (Rs.)	% of ending inventory to material quantity consumed
A	1,014,200	6,744,430	11
B	754,000	3,883,100	13
C	228,000	1,390,800	08

Required:

Calculate material price, usage, mix and yield variances.

(18)

Q.4 Sajid Industries Limited purchases a component 'C' from two different suppliers, Y and Z. The price quoted by them is Rs. 90 and Rs. 87 per component respectively. However 7% of the components supplied by Y are defective whereas in case of Z, 11% of the components are defective. The use of such defective components results in rejection of the final product. However, the final products to be rejected are identified when the product is 60 % complete. Such units are sold at a price of Rs. 200.

The average cost of the final product excluding the cost of component C is as follows:

	Rupees
Material (excluding the cost of the component C)	420
Labour (3 hours @ Rs 60 per hour)	180
Overheads (Rs. 40 per hour based on labour hours)	120
	720

50% of the material (including the component C) is added at the start of the production whereas the remaining material is added evenly over the production process.

The company intends to introduce a system of inspection of the components, at the time of purchase. The inspection would cost Rs. 20 per component. However, even then, only 90% of the defective components would be detected at the time of purchase whereas 10% will still go unnoticed. No payments will be made for components which are found to be defective on inspection. The total requirement of the components is 10,000 units.

Required:

Analyze the above data to determine which supplier should be selected and whether the inspection should be carried out or not.

(18)

Q.5 Aftab Limited manufactures CNG kits for certain automobiles. The management of the company foresees sudden rise in the demand of CNG kits in the next year and they are trying to work out a strategy to meet the rising demand.

Following further information has been gathered by the management:

- (i) The current market demand is 650,000 units while the company's share is 40%. The demand for the next year is projected at 1,000,000 units while the company expects to maintain its current market share.
- (ii) The production capacity of the company while working 8 hours per day is 350,000 units.
- (iii) The selling price and average cost of production per unit for the current year, are as follows:

	Rupees	
Selling Price		40,000
Less: Cost of production		
Material	24,000	
Labour (34 hours per unit)	3,400	
Overheads (60% variable)	2,800	30,200
Gross Profit		9,800

- (iv) Since the company was working below capacity, 15% of the labour remained idle and were paid at 10% below the normal wages. These wages are included in fixed overheads.
- (v) To increase the production beyond the normal capacity, overtime will have to be worked which is paid at twice the normal rate. Also, the fixed overheads, other than the labour idle time, would increase by 10%.
- (vi) The management has negotiated with certain vendors and received the following offers:
 - A present supplier of raw material has offered bulk purchasing discount @ 2.5%, if the total purchases during the year exceeds Rs. 9.0 billion.
 - A manufacturer of CNG kits in Italy has offered to supply any number of finished CNG kits at US\$200 per unit. The landed cost of these units in Pakistan would be Rs. 29,000 per unit.

Required:

Determine the best course of action available to the company.

(13)

(4)

Q.6 Rafiq Industries specializes in production of food and personal care products. During the year 2010, the company intends to launch a new product called PQR. The relevant details are as follows:

- (i) The product would be sold in 3 pack sizes and the sales have been projected as follows:

Pack size	Units
500 grams	200,000
1 kg	120,000
2 kg	90,000

- (ii) For producing 1 kg of output, following materials would be required:

- 0.5 kg of material A which costs Rs. 300 per kg.
- 1 kg of material B. Current stock of material B is 250,000 kgs and it was purchased @ Rs. 100 per kg. Its current purchase price is Rs. 125 per kg. The expiry date of the current stock is December 31, 2010. Before the expiry date, it could be disposed of at the rate of Rs. 110 per kg.
- 100,000 kgs of material B could be used in producing another product called UVW with additional cost of Rs. 4,000,000 which could then be sold at the rate of Rs. 160 per kg. However, both PQR & UVW are produced on the same machine. The machine has to be worked at 100% capacity for producing the required quantity of PQR.

- (iii) Cost of packing materials have been projected as under:

Pack size	Cost per unit
500 grams	30
1 kg	40
2 kg	55

- (iv) 100 kgs of product would require 5 hours of skilled labour and 10 hours of unskilled labour. Skilled labour is paid at Rs. 70 per hour and unskilled labour at Rs. 45 per hour. Currently, the company has 5,000 idle hours of skilled labour and has a policy to pay 50% for idle hours.
- (v) The production capacity of the factory is 2 million kgs but currently the factory is operating at 50% capacity. Fixed overheads at 100% capacity are Rs. 25 million. However, if the factory operates below capacity, the fixed overheads are reduced as follows:
- by 10% at below 80% of the capacity
 - by 25% at below 60% of the capacity

Required:

Calculate the sale price for each pack size of the new product assuming that the company wants to earn a profit of 25% on the cost of the product which shall include relevant costs only.

(17)

(THE END)