The Institute of Chartered Accountants of Pakis

Management Accounting

Final Examination	3 December 2013
Winter 2013	100 marks – 3 hours
Module F	Additional reading time – 15 minutes

Q.1 Alpha Motors (Private) Ltd. (AMPL) manufactures a product X22 at an approximate cost of Rs. 750,000 per unit. Breakup of the cost is as follows:

	Rupees
Component Y	600,000
Other raw materials	50,000
Labour	50,000
Variable overheads	50,000

Annual sale of X22 is estimated at 900 units at Rs. 0.8 million per unit. Fixed costs are estimated at Rs. 12 million per annum.

Component Y has to be imported from Italy and ideally it takes around 30 days to reach the company after the placement of order. However, the process is sometimes delayed by upto 30 days. The number of days for which the process may be delayed and the probability thereof are given below:

Delay (in days)	**Probability of occurrence**
0	90%
10	5%
20	3%
30	2%

The ordering costs are Rs. 10,800 per order whereas the inventory is kept in a third party godown which charges Rs. 350 per day per unit of component Y. Incremental cost of financing for AMPL is 15% per annum. During idle time, AMPL pays 50% wages to the labour force.

It may be assumed that AMPL works throughout the year and one year has 360 days.

Required:
Analyse the above data to determine the following:
(a) Economic order quantity (EOQ) of component Y. **(04)**
(b) Safety stock of component Y that should be in hand when the next order is placed, so as to maximize the profit. **(10)**

Q.2 Twinkle Company Limited is expected to achieve a sale of Rs. 120 million during the current year. The contribution margin is expected to be 20% whereas the margin of safety is estimated at 25%.

During the next year, the company intends to reduce its prices by 5% and plans to market its products vigorously to increase the sales volume.

Salaries constitute 40% of the total fixed costs and according to the union agreement an increment of 20% is to be given to all staff. Other fixed costs are likely to remain constant.

Required:
Compute the percentage of increase in sales volume that the company should achieve so as to maintain a safety margin of 25%. **(07)**

Q.3 Taj Limited deals in production and marketing of fast moving consumer goods. Its financial statements for the latest year depict the following position:

	Personal care	Detergents	Tea	Total
Revenue and expenses	----------------	Rs. in million	----------------	
Sales revenue	22,040	8,420	4,160	34,620
Cost of goods sold	(14,909)	(6,044)	(3,226)	(24,179)
Gross profit	7,131	2,376	934	10,441
Selling expenses	(1,519)	(602)	(604)	(2,725)
Common expenses	(2,655)	(1,014)	(501)	(4,170)
Segment profit/(loss)	2,957	760	(171)	3,546
Assets				
Fixed assets at book value	21,450	8,630	3,420	33,500
Stock in trade	1,864	556	432	2,852
Trade debts	2,436	670	575	3,681
Unallocated assets	-	-	-	4,356
Total assets				44,389
Equity and liabilities				
Share capital	-	-	-	22,624
Revaluation surplus	1,546	542	632	2,720
				25,344
10% long term loan	-	-	-	9,500
Trade creditors	1,670	520	365	2,555
Short term borrowings	-	-	-	3,570
Other liabilities	-	-	-	3,420
				44,389

Management is considering to dispose of the tea segment due to stiff competition and constantly declining margins. Following information is available in this regard:

(i) Market research suggests that the quantity of tea sold would decline by 1% per year for the next two years. The company can increase the price of tea by 5% each year whereas the effect of inflation on costs would be 6% per annum. Reliable projections beyond the two year period cannot be made.

(ii) Entire selling expenses are variable. Common expenses include financial and fixed administration expenses which are allocated on the basis of sales.

(iii) The administration expenses could be reduced by 5% due to decrease in overall work load because of sale of tea segment.

(iv) The existing direct labour can be laid off by paying six months' salaries amounting to Rs. 625 million.

(v) Average annual utilization of short-term borrowings are Rs. 2,000 million and carry interest at 12%.

(vi) Stock in trade could be sold in the market at 10% less than the cost.

(vii) Trade debts are net of 3% provision for doubtful debts. However, if the company discontinues business, the write-offs will be 12%.

(viii) Depreciation is charged on plant and machinery at 10%, building at 5% and other fixed assets at 20% on written down value.

(ix) Fixed assets other than factory building could be sold at a loss of 20%. The factory building which has a book value of Rs. 600 million including revaluation surplus of Rs. 135 million, can be sold at a profit of 20%.

(x) The tea factory building could be used for future expansion. Initially, the current godown used for storage of goods outside the factory premises could be shifted to the vacant building using 40% of the area. The annual expenses of godown includes rent, utilities and labour amounting to Rs. 20 million, Rs. 6 million and Rs. 3 million respectively.

Required:
Analyse the above data and prepare recommendations for the management clearly specifying the pros and cons of the decision to dispose of the tea segment. ***(Ignore taxation)*** **(23)**

Q.4 After years of research, Hamid (Private) Limited (HPL) has developed a new product 'CRISP'. The planning department has provided the following estimates related to the production cost of first batch of 5,000 units of CRISP:

Particulars	Cost per unit (Rs.)
Material (100 kg @ Rs. 8 per kg)	800
Direct labour (10 hours per unit @ Rs. 250 per hour)	2,500
Variable overheads (60% of direct labour)	1,500
Fixed overheads – allocated costs	200
– specific costs	100

Rate of learning is estimated at 80% but the learning effect is expected to apply to the first 5 batches only.

The marketing department has informed that the demand for CRISP would be around 50,000 units per annum for the next 5 years and HPL can charge a price of Rs. 3,200 per unit. Selling expenses are estimated at Rs. 200 per unit.

Required:
Based on the above data, recommend whether it would be feasible to produce and sell CRISP. **(15)**

Note: log 0.8/log 2 = – 0.322

Q.5 Mujahid (Private) Limited (MPL) is engaged in the manufacture of a product OY-1 which requires two kg of raw material ZL. The first kg of ZL is employed at the start of the manufacturing process whereas the second kg is used when the process is 70% complete.

ZL is currently supplied by local suppliers at Rs. 5,000 per kg whereas it can also be imported at a cost of Rs. 6,000 per kg. The Economic Order Quantity for local purchases is 400 kg whereas import orders of less than 1,000 kg are not possible.

Following information pertains to the manufacturing process:

- All units in process are inspected at two different stages i.e. when the process is 60% complete and again when it is 80% complete. At each stage 10% of the units in process are identified as defective. This loss can be reduced to 3% if imported material is used.
- Defective units identified on first and second inspection are sold on as is where is basis for Rs. 500 and Rs. 800 per unit respectively.

Each unit of OY-1 requires raw material (excluding ZL), labour and variable overheads of Rs. 3,000, Rs. 2,000 and Rs. 1,000 respectively. Labour is paid at Rs. 100 per hour. All costs are incurred evenly during the manufacturing process. Total of 200,000 labour hours are available with MPL.

Market for OY-1 is fairly competitive; however, any quantity of OY-1 can be sold for Rs. 22,000 per unit. Incremental cost of financing for MPL is 15%.

Required:
(a) Analyse the above data and determine whether the raw material ZL should be acquired locally or imported. **(17)**
(b) Briefly describe some of the risks associated with shifting from local purchases to imports and what measures can be taken to mitigate these risks. **(04)**

Q.6 Beta (Private) Limited (BPL) deals in manufacturing and marketing of bed sheets. The management of the company is in the phase of preparation of budget for the year 2013-14. BPL has production capacity of 4 million bed sheets per annum. Currently the factory is operating at 68% of the capacity. The results for the recently concluded year is as follows:

	Rs. in million
Sales	3,400
Cost of goods sold	
Material	(1,493)
Labour	(367)
Manufacturing overheads	(635)
Gross profit	905
Selling expenses (60% variable)	(287)
Administration expenses (100% fixed)	(105)
Net profit before tax	**513**

Other relevant information is as under:

(i) The raw material and labour costs are expected to increase by 5%, while selling and distribution costs will increase by 4% and 8% respectively. All overheads and fixed expenses except depreciation will increase by 5%.

(ii) Manufacturing overheads include depreciation of Rs. 285 million and other fixed overheads of Rs. 165 million. During the year 2013–14 major overhaul of a machine is planned at a cost of Rs. 35 million which will increase the remaining life from 5 to 12 years. The current book value of the machine is Rs. 40 million and it has a salvage value of Rs. 5 million. At the end of 12 years, salvage value will increase on account of general inflation to Rs. 9 million. The company uses straight line method for depreciating the assets.

(iii) Variable manufacturing overheads are directly proportional to the production volume of production.

(iv) Selling expenses include distribution expenses of Rs. 85 million, which are all variable.

(v) Administration expenses include depreciation of Rs. 18 million. During 2013–14, an asset having book value of Rs. 1.5 million will be sold at Rs. 1.8 million. No replacement will be made during the year. Depreciation for the year 2013-14 would reduce to Rs. 17 million.

The management has planned to take following steps to increase the sale and improve cost efficiency:

- Increase selling price by Rs. 150 per unit.
- The sales are to be increased by 25%. To achieve this, commission on sales will be introduced besides fixed salaries. The commission will be paid on the entire sale and the rate of commission will be as follows:

No. of units	Commission % on total sale
Less than 35,000	1.00%
35,000 – 40,000	1.25%
40,000 – 50,000	1.50%
Above 50,000	1.75%

  Currently the sales force is categorized into categories A, B and C. Number of persons in each category is 20, 30 and 40 respectively. Previous data shows that total sales generated by each category is same. Moreover, sales generated by each person in a particular category is also the same. The trend is expected to continue in future.

- The overall efficiency of the workforce can be increased by 15% if management allows a bonus of 20%. Further increase in production can be achieved by hiring additional labour at Rs. 180 per unit.

Required:

Prepare profit and loss budget for the year 2013–14. **(20)**

(THE END)