

THE INSTITUTE OF CHARTERED ACCOUNTANTS OF PAKISTAN

EXAMINERS' COMMENTS

SUBJECT	SESSION
Management Accounting	Final Examination - Summer 2008

Q.1 Maximization of profit subject to three different constraints

Although an easy question, the performance was average as about 50% students secured passing marks.

Part (a)

According to the situation given in the question, the company had to make a decision between producing product X and Y and there were three types of constraints as under:

- (i) Limited availability of funds, as a result of which the company could only make a sale of Rs. 200 million.
- (ii) 34000 machine hours were available for production.
- (iii) The company was already committed for supply of certain quantity of both products.

The question could have been solved in four easy steps i.e.

- Computing the committed amount of sales.
- Determining the product with better contribution margin, as a percentage of sales.
- Determining how many additional units could be sold subject to the limit on total sales.
- Determining whether the additional quantity as determined above, could be produced in the available machine hours.

Another way of arriving at the solution was to determine the additional quantity, initially on the basis of available machine hours, using contribution per hour to determine the better product and then testing whether the quantity so determined can be sold, subject to constraint on total sales.

The students used either method and arrived at the correct answer. The mistakes generally made in the process, were as under:

- (i) Instead of solving the question in the manner discussed above, many students resorted to linear programming and graphical methods of solving inequalities. Almost all such students abandoned the question halfway after having consumed a lot of time.
- (ii) Many students who followed the first approach, did not test the second constraint i.e. machine hours. Similarly many of those who followed the latter approach, did not test the constraint related to total sales.
- (iii) A few students wasted their time in preparing proper P & L account for arriving at contribution per unit, which was not required.
- (iv) Some students misinterpreted the information regarding 'production per machine hour' as 'machine hours per unit'.

Part (b)

This part involved consideration of an option to increase the sale by Rs. 60 million by availing a credit facility of Rs. 25 million. The solution involved four further steps as discussed below:

- Determining how many additional units of the better product, as determined in part (a), could be sold considering the above constraint.
- Determining the additional quantity which can be produced in the remaining available hours.
- Determining the additional contribution as a result of additional sales, applying the lower of the two quantities determined above.
- Comparing the additional contribution and mark-up payable on the credit facility.

Only those students who successfully completed part (a), were able to complete this part of the question. However, many students ignored the constraint related to machine hours and concentrated on the constraint related to sale of Rs. 60 million. Although they managed to reach the same conclusion yet they lost marks related to the step they missed.

Q.2 Determination of working capital requirements

This was an easy topic but only about one-fifth of the students could secure passing marks. Common mistakes noted in the answer scripts were as follows:

- (i) One of the conditions mentioned in the question was that the volume of local sales will increase by 10%. Many students mis-understood it and assumed that local sales would increase from 60% of the total sales to 70% of the total sales.

- (ii) Another condition in the question was that total sales will increase by 25%. Consequently, the exports should have been computed as a balancing figure i.e. total sales of Rs. 1.25 billion less local sales as discussed in (i) above. Many students could not follow this simple procedure.
- (iii) The procedure for bifurcation of credit sales into sale to customers claiming 1% discount, 2% discount and those not claiming any discount proved too difficult. According to the question the sales on which 2% discount was claimed was twice the sales on which 1% discount was claimed. Hence discount allowed on the former was $2 \times 2 = 4$ times the discount allowed on the latter. Since the total discount was given, the bifurcation was easily possible but very few students could do this step correctly.
- (iv) For calculating raw materials consumption and closing stock of raw material, the calculation of increase in volume of sales was relevant. Instead, many candidates computed these on the basis of value of sales of the current financial year. Some of the students went a step further and computed it on the basis of previous years' sales. The proper method was to compute the value of current years' sales based on previous years' price which amounted to Rs. 1.151 billion, comprising of local sales of Rs. 660 million (Rs. 600 million plus 10% volume increase) plus current years' exports of Rs. 491 million, because entire increase in export was volume driven.
- (v) Many students took purchases as equal to cost of sales completely ignoring opening/closing stocks of raw materials.
- (vi) A large number of student calculated finished goods stock as 1/12 of Rs. 1.250 billion instead of the correct figure of Rs. 77.509 as worked out hereunder:

Raw material 48% of 1/12 of 1.151 billion plus 5% increase in price.	Rs. 48.342 million
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Labour and factory overheads – 1/12 of 28% of Rs. 1.250 billion.	Rs. 29.167 million
	<u>Rs. 77.509 million</u>

- (vii) Many candidates did not consider the following, in the computation of working capital:
- Advance to supplier against raw material C
 - Creditors related to Labour, Factory Overhead and Administration Expenses
- (viii) Many students ignored the assumption as given in the question that a year should be taken as 360 days.

Q.3 (a) **Decision Tree**

This was a straightforward question and majority of the students scored good marks. However, a number of students did not attempt the question probably because they had not prepared this topic on account of selective studies.

(b) **Learning Curve Technique**

This was a simple question but most of the students couldn't analyze the situation properly. The procedure to solve the question is discussed below:

- (i) Since learning curve was 80% and the first unit was produced in 5000 hours, the average and total hours for first 16 units could be computed as follows:

No. of units	Average hours	Total hours
1	5,000	5,000
2	4,000	8,000
4	3,200	12,800
8	2,560	20,480
16	2,048	32,768

- (ii) The total hours for 9 to 16 units would then be $32,768 - 20,480 = 12,288$ hours (since 8 units had already been produced and supplied).
- (iii) Computing the total cost including material, labour (as discussed in the above step) and factory overhead, was quiet easy as all the relevant information was clearly given in the question.
- (iv) Calculating profit and determining the desired selling price.

A large number of students got confused in following the above steps and made either of the following mistakes:

- Took average time for 9 – 16 units as 2048 hours and therefore total time as $2048 \times 8 = 16,384$ hours.
- Worked out the time for first 8 units without realizing that 8 units had already been produced in the first order and they were supposed to calculate the time for the new order.
- Worked out the time for 56 units probably because there was a mention of 56 units in the first paragraph of the question but in a very different context.
- Computing the margin as 20% of cost instead of 20% of Sale Price.

Q.4 Computing actual costs and variances

In the past, the students had not fared well in questions based on standard costing. However, this time the performance was far better as about 36% were able to secure passing marks. Some of the common mistakes were as follows:

- (i) Many students could not calculate actual selling price per unit which was Rs. 95 (100 / 1.0526).
- (ii) Some students could not compute the volume of sales i.e. 4,850,000 units (adverse selling price variance of Rs. 24.25 million divided by adverse variance of Rs. 5 per unit).
- (iii) Many students could not compute the actual usage of material Z which was required for Calculating Material Mix Variance. The calculation was simple, considering the following information given in the question:
 - Since yield variance was “Nil”, the actual (total) material consumption per unit should have been equal to the standard usage i.e. 30 kg.
 - The actual consumption of material X was 4.50 kg per unit, i.e. 10% below budget.
 - Actual consumption of material Y was 10.60 kg. i.e. 6% above budget.
 - Hence the remaining consumption was of material Z i.e. 14.90 Kg (30.00 – 4.50 – 10.60).

Q.5 Determining cost under two different cost allocation methods

- (a) This part of the question was quiet easy as the basis of allocation of each type of factory overhead to the four activities, was clearly given in the question. The only issue which created some confusion was that 55% of the Administrative salaries were shown in the question, under the heading “Unallocated”. The unallocated portion obviously meant that it could not be allocated to any of the given activities. However, many students tried to allocate it also, in different ways, all of which were obviously, incorrect.
- (b) In this part the students were required to ascertain the amount of discount that may be allowed to a customer, if the company decides to use the ABC system of costing and consequently, changes the basis of working out the price. The answer consisted of three main steps as under:
 - Working out the Cost under the present method and computing the price which had been quoted by adding a mark up of 50%.
 - Working out the cost under ABC method of costing and computing the sale price after adding 20% margin, **on selling price**.

- Taking, the difference between the price computed under either method, to determine the discount that can be offered.

Although some students were unable to understand how the discount will be determined but the majority followed the correct procedure. The most common error was in computing the margin under the ABC Method as many students calculated it by taking 20% of cost instead of 20% of selling price.

Q.6 This proved to be the most difficult question of the paper. According to the situation given in the question, the management of a company (KL) wanted to decide whether to continue the present system of out-sourcing of services required to be provided during the period of warranty or to start providing the services itself. Majority of the students couldn't comprehend the whole situation and produced answers consisting of various steps without being able to integrate them for arriving at the final conclusion.

The common errors were as follows:

- There were two approaches to solve the question (i) total revenue and cost approach whereby total profit/margin earned under both options was to be computed and (ii) differential margin approach whereby only the increase or decrease in the margin under the proposed option, was to be computed. Most students mixed up the two approaches and consequently made many errors.
- Very few students were able to compute the total billing under the new proposal. Majority of the students split commission of Rs. 990,000 in the ratio of 20:80 for domestic and industrial consumers and then grossed them up by 15% and 10% to arrive at the total billing of Rs. 9,240,000. The correct approach was as follows:

		Customers		
		Domestic	Industrial	Total
Ratio of services provided by AHA	A	20	80	100
Share of KL (%)	B	15	10	
Ratio of KL's share – AxB	C	3	8	11
Annual share received from AHA $990 \times \frac{3}{11}$ and $990 \times \frac{8}{11}$	D	270,000	720,000	990,000
Total billing by AHA – D/B	E	1,800,000	7,200,000	9,000,000

- An important step was to calculate the cost of labour and overheads. The procedure involved and the common mistakes are discussed below:
 - Calculating the net recoveries by AHA amounting to Rs. 8,010,000 i.e. total billing of Rs. 9,000,000 less share paid to KL amounting to Rs. 990,000. Most of the candidates failed to deduct Rs. 990,000.

- Calculating the amount recovered by AHA from the customers for supply of material and deducting it from the recoveries as determined in (i) above, to arrive at the recoveries in respect of labour and overhead. The recoveries against material supplied should have been computed as under:

	<u>Rupees</u>
Mark-up charges by KL on supply of material (as given)	360,000
Cost of material supplied by KL (360,000 / 15%)	<u>2,400,000</u>
	2,760,000
Add: Further mark up charged by AHA	<u>690,000</u>
	<u>3,450,000</u>

A large number of students were unable to perform the above calculation.

- Based on the calculations discussed in para (i) and (ii) above, the recoveries for labour and overhead incurred after the warranty period amounted to Rs. 4,560,000 (8,010,000 – 3,450,000).

According to the question the service charges billed by AHA included a mark up of 50% over cost. However, many students took the mark-up as 50% of Rs. 4,560,000 instead of the correct method i.e. $50/150 \times 4,560,000$.

- The cost as determined above, was the cost incurred after warranty period. Another important step was to determine the cost during the warranty period. Most students ignored it altogether. Many others computed it as 20% of the cost incurred after the warranty period whereas it was mentioned in the question that “20% of all services were provided during the warranty period” and hence the correct way to calculate it was on the basis of the ratio of 20:80 for costs prior to and after warranty period, respectively.
- (iv) Few students computed the total profit under the proposed option only. They ignored the amounts which KL was earning presently i.e. by way of mark-up billed to AHA and share of billing received from AHA.

(THE END)