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The Institute of Chartered Accountants of Pakistan

Management Accounting

Final Examination	10 December 2011
Winter 2011	100 marks - 3 hours
Module F	Additional reading time - 15 minutes

Q.1 Hunarmand Limited is engaged in manufacturing of a product ELT for the local industry. Its latest quarterly profit and loss account is as follows:

	Rs. in '000	
Sales		350,000
Less: Material	234,500	
Labour (including idle labour)	28,650	
Factory overheads	57,000	320,150
Gross profit		29,850
Less: Admin expenses	8,000	
Selling and distribution expenses	15,000	23,000
Net profit		6,850

The existing production requires 22,500 and 36,000 labour hours of skilled and unskilled labour per month respectively. The company's agreement with the labour union does not allow it to lay off workers and consequently, 10% of the skilled and 4% of unskilled labour remain idle. The skilled labour is paid at Rs. 200 and unskilled labour at Rs. 125 per hour. Idle labour is paid 80% of the above amounts.

The factory overheads include rent and depreciation of Rs. 20 million and Rs. 14 million respectively; the remaining overheads are directly proportional to the total (skilled and unskilled) labour hours worked.

Admin expenses are all fixed whereas 80% of selling and distribution expenses are variable.

In order to utilise the idle capacity, the management is considering bidding for a tender which requires a modified version of ELT to be supplied to a buyer. The relevant information is as follows:

(i) The order would occupy 40% of the existing capacity. If accepted, the production is expected to commence after 30 days. The work would be completed within 60 days from the date of commencement.

(ii) On account of intense competition, the company is currently operating at 75% capacity and expects to operate at the same level for the next few years.

(iii) In order to make the necessary modification, a machine would need to be purchased at a cost of Rs. 4.5 million, having a life of 3 years with no residual value. After completion of the order, the company would be able to sell the machine for Rs. 3 million. However, the company may decide to keep the machine and dispose of another machine for Rs. 300,000. Such an exchange would reduce the labour hours required to produce ELT by 5%.

(iv) 8,000 kg of material A and 500 kg of material B will be required for the proposed order. These are available in the market at Rs. 820 and Rs. 750 per kg respectively. Material B is also used in the existing production. Its cost as per inventory ledger is Rs. 700 per kg and 6,000 kg of material B is presently available which is sufficient to meet the next three months' production requirements at the existing level. The balance of the existing stock of Material B would become obsolete if it is not used within the next three months after which it would have a market value of Rs. 50 per kg. Currently the company could sell this material at Rs. 600 per kg.

(v) The new order would require 6,000 skilled and 15,000 unskilled labour hours.

Required:
Determine the bid price if the company wants to earn a margin of 20% on relevant cost. ***(20 marks)***

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Q.2 Sanatkar Limited (SL) manufactures and sells three products i.e. XA, YA and ZA. The following information relates to the budgeted and actual operations during the month of November 2011.

(i) The standard selling price and standards cost per unit of the three products were as follows:

	XA	YA	ZA
	Rupees		
Selling price	200,000	300,000	475,000
Material costs	39,500	54,000	78,000
Direct labour costs (Rs. 100 per hour)	80,000	100,000	150,000
Overheads	125% of direct labour cost		

(ii) At the start of the month, SL increased the salaries by 5% on account of which the management anticipates an 8% increase in efficiency.
(iii) The budgeted sales of XA, YA and ZA were 60, 28 and 20 units whereas actual sales of the three products were 80, 24 and 30 units respectively.
(iv) The budgeted and actual operating results for November 2011 are summarized below:

	Budgeted	Actual
	Rupees	
Sales revenue	29,900,000	37,425,000
Material costs	(5,442,000)	(6,931,920)
Labour costs (120,000 labour hours)	(10,600,000)	(12,887,700)
Overheads	(13,250,000)	(16,882,900)
Profit	608,000	722,480

(v) SL launched a promotion campaign for XA in which 35 units were sold at Rs. 180,000 per unit. The remaining units of XA were sold at Rs. 215,000. Sales of YA and ZA were made at standard price.

Required:
Calculate the following variances for inclusion in the Management Report:
(a) Sales volume variance;
(b) Sales price variance bifurcated into planning and operational components; and
(c) Labour efficiency variance bifurcated into planning and operational components. ***(16 marks)***

Q.3 Takneek Company Limited (TCL) has been awarded a contract for supply and installation of technical equipments. The amount of contract is Rs. 140 million plus sales tax. Other terms, conditions and other relevant information are as follows:

(i) The customer will provide 25% mobilization advance in January 2012.
(ii) Percentage of completion is estimated at 30, 75 and 100 percent by the end of January, February and March 2012 respectively. TCL would raise invoices for the same in subsequent months. The amounts would be received in the month in which the invoices are raised.
(iii) All receipts would be subject to withholding tax at 6%.
(iv) The running bills would be subject to retention @ 5% of the value before sales tax. The retention money would be released after 60 days of completion of contract.
(v) The mobilization advance would be adjusted proportionately from the running bills.
(vi) The equipments required for the contract would be purchased in January 2012 at a cost of Rs. 95 million inclusive of sales tax. The supplier is registered under the Sales Tax Act, 1990 and would provide a credit of 60 days.
(vii) TCL would sub-contract the installation and related work to Expert Systems Limited. 30% payment will be made at the commencement of the project and the balance would be paid in the month of March 2012. Installation charges are not subject to sales tax.
(viii) Sales tax is paid/claimed subsequent to the month in which the invoice is raised. Any excess input is available to be carried forward for adjustment in the next month.
(ix) The sales tax rate is 16%. The projected profit is estimated at 15% of the contract price.

Required:
A month-wise cash flow for the project. ***(14 marks)***

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Q.4 Sawari Limited manufactures 100cc motorcycles. Due to acute competition in the market, the profitability of the company has been decreasing since the last three years. The management has hired a consultant to suggest measures to improve the profitability. Following is the latest annual profit and loss account of the company:

	Rs. in '000	
Sales (24,960 units)		1,560,000
Material	834,400	
Labour	138,600	
Warranty costs	998	
Factory overheads	193,502	
Cost of goods manufactured	1,167,500	
Opening inventory	126,000	
Closing inventory	(167,500)	1,126,000
Gross profit		434,000

The consultant has made the following suggestions on the basis of which the cost could be reduced:

I. Replace the plant and machinery which was purchased 12 years ago at a cost of Rs. 54 million and has a remaining useful life of 6 years. The new machinery with advanced technology is available at a cost of Rs. 200 million with a useful life of 20 years. The change is expected to bring following benefits:

- Currently, 25 skilled labour hours are required to produce one unit of output. New plant is more automized and will require 12 semi-skilled labour hours and 8 skilled labour hours. Semi skilled labour can be hired at 70% of the cost of skilled labour.
- The raw material wastage would be reduced from 4% to 2% of input. Furthermore, the improvement in quality will reduce the warranty claims from 1% to 0.4% of the units sold. The average cost of warranty claim will also be reduced from Rs. 4,000 to Rs. 3,500 per claim.

The company follows straight line method for charging depreciation with the residual value of the plant assumed at 10% of cost.

II. Presently, the material is purchased in bulk quantity which is sufficient to produce 14,000 units. The ordering cost is Rs. 45 thousand per order. On account of bulk purchases, the suppliers allow a discount of 1.5% of the purchase value. The company maintains a safety stock of raw material which is sufficient to produce 4,000 units. The annual stock holding cost is 4% of the cost of inventory.

The consultant has recommended the introduction of a Just in Time (JIT) system of stock management which would have the following effects:

- reduction in order size by 85.71%
- safety stock would not be required
- discount would not be available

Additional Information

(i) Opening and closing inventory of motorcycles in the above profit and loss account is 2,500 and 3,540 units respectively. Next year the company expects to produce and sell 28,000 units.
(ii) Fixed overheads amount to Rs. 25 million excluding depreciation.
(iii) Material prices and labour rates are projected to increase by 8% and 10% respectively. Factory overheads other than ordering and holding costs and depreciation would increase by 10%. However, if the new machine is purchased, the savings in maintenance cost would limit the increase to 7%.

Required:
Evaluate the consultant's suggestions and give your recommendations for the next year. ***(23 marks)***

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Q.5 Karobar International manufactures a single product. The product is processed in three different departments. The company uses first-in-first-out method for process costing.

During November 2011, the costs incurred and units processed in department 2 were as follows:

	Units	Rs.
Opening work in process	2,000	128,750
Units received from department 1	53,000	2,057,500
Cost added by department 2		
Materials		988,000
Direct labour		488,000
Production overheads		244,000
Units transferred to department 3	48,000	
Closing work in process	5,000	
Defective units	2,000	

The normal loss is 5% of the units produced (including defective units) and is identified at the start of the process. The defective units are sold at Rs. 15 per unit. Details of percentage of completion of opening and closing work in process are as follows:

	Work in process	
	Opening	**Closing**
Materials	80%	70%
Labour and production overheads	60%	50%

Required:
Prepare process account of department 2 for the month of November 2011. ***(13 marks)***

Q.6 Khudkar Limited (KL) manufactures customized equipments using a semi automated plant. It has recently received an inquiry from a well-reputed customer for the manufacturing of 500 units of a new type of equipment for Rs. 10,500 per unit. Based on the initial estimates, KL is not much inclined to accept this order as the gross profit margin is quite low. However, the customer has assured KL that at least one repeat order would be made.

The cost estimates per unit for the first order are as follows:

		Department	
		A	**B**
		Rupees	
Direct material		3,350	
Direct labour	3 hours of semi skilled labour	720	
	20 hours of skilled labour		4,000
Fixed overhead absorbed (per labour hour)		40	15
Variable overheads		25% of direct labour cost	

Based on the data available with the company, an 80% learning curve is applicable to the company's skilled labour. Extract from 80% learning curve table are as follows:

X	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
Y%	100	97.0	94.3	91.7	89.5	87.6	86.1	84.4	83.0	81.5	80.0

Required:
Determine what should be the size of the repeat order if the company wants to earn an average gross profit margin of 20% on the two orders. ***(14 marks)***

(THE END)

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