The Institute of Chartered Accountants of Pakistan

Certificate in Accounting and Finance Stage Examinations

4 March 2015
3 hours – 100 marks
Additional reading time – 15 minutes

Cost and Management Accounting

Q.1 KPK Dairies Limited (KDL) is planning to introduce three energy flavored milk from 1 July 2015. In this respect, following projections have been made:

		C-Plus	I-Plus	V-Plus
Planned production	(No. of packets)	540,000	275,000	185,000
Sales	(No. of packets)	425,000	255,000	170,000
Production cost per packet:		---------- Rupees ----------		
Direct material		100	98	97
Direct labour		15	13	12
Variable overheads		23	19	16
Fixed overheads		25	22	20
Selling and distribution cost per packet:				
Variable overheads		12	8	10
Fixed overheads		5	5	5
Total cost per packet		**180**	**165**	**160**

KDL will sell its products through a distributor at a commission of 5% of sale price and expects to earn a contribution margin of 40% of net sales i.e. sales minus distributor's commission.

Required:
Compute break even sales in packets and rupees, assuming that ratio of quantities sold would be as per projections. **(17)**

Q.2 Diamond Investment Limited (DIL) is considering to set-up a plant for the production of a single product X-49. The details relating to the investment are as under:

(i) The cost of plant amounting to Rs. 160 million would be payable in advance. It includes installation and commissioning of the plant.
(ii) Working capital of Rs. 20 million would be required at the commencement of the commercial operations.
(iii) DIL intends to sell X-49 at cost plus 25% (cost does not include depreciation on plant). Sales for the first year are estimated at Rs. 300 million. The sales quantity would increase at 6% per annum.
(iv) The plant would be depreciated at the rate of 20% under the reducing balance method. Tax depreciation is to be calculated on the same basis. Estimated residual value of the plant at the end of its useful life of four years would be equal to its carrying value.
(v) Tax rate is 34% and tax is payable in the year the liability arises.
(vi) DIL's cost of capital is 18%. All costs and prices are expected to increase at the rate of 5% per annum.

Required:
Compute the following:
(a) Net present value of the project **(12)**
(b) Internal rate of return of the project **(05)**

Assume that unless otherwise specified, all cash flows would arise at the end of the year.

Q.3 Sigma Limited (SL) is a manufacturer of Product A. SL operates at a normal capacity of 90% against its available annual capacity of 50,000 machine hours and uses **absorption costing**. The following summarised profit statements were extracted from SL's budget for the year ending 31 December 2015.

	Actual - 2014		Budget - 2015	
	Units	**Rs. in '000**	**Units**	**Rs. in '000**
Sales	4,125	49,500	4,600	56,580
Opening inventory	400	(3,400)	600	(5,400)
Cost of production	4,325	(38,925)	4,500	(44,325)
Closing inventory	600	5,400	500	4,925
Under absorbed production overheads		(100)		-
Selling and administration cost (30% fixed)		(3,000)		(5,250)
Net profit		**9,475**		**6,530**

Other relevant information is as under:

	2014	Budget - 2015
Standard machine hours per unit	10 hours	10 hours
Standard production overhead rate per unit	Rs. 2,000	Rs. 2,250
Estimated fixed production overheads at normal capacity	Rs. 3,600,000	Rs. 4,050,000
Actual production overheads (Actual machine hours 44,000)	Rs. 8,750,000	-

Required:

(a) What do you understand by under/over absorbed production overheads? **(02)**

(b) Analyse the under absorbed production overheads of SL for the year ended 31 December 2014, into spending and volume variances. Give two probable reasons for each variance. **(06)**

(c) Prepare budgeted Profit and Loss Statement for the year ending 31 December 2015, using **marginal costing**. **(07)**

(d) Analyse the difference between budgeted profit determined under absorption and marginal costing, for the year ending 31 December 2015. **(02)**

Q.4 KS Limited operates two production departments A and B to produce a product XP-29. Following information pertains to Department A for the month of December 2014.

	Litres	**Rs. in '000**
Opening work in process (Material 100%, conversion 80%)	15,000	
▪ Material	-	5,000
▪ Direct labour and overheads	-	2,125
Actual cost for the month:		
▪ Material	120,000	36,240
▪ Direct labour	-	14,224
▪ Overheads	-	11,500
Expected losses	5%	-
Closing work in process (Material 100%, conversion 80%)	17,000	-
Units transferred to Department B	110,000	-

KS uses FIFO method for inventory valuation. Direct materials are added at the beginning of the process. Expected losses are identified at the time of inspection which takes place at the end of the process. Overheads are applied at the rate of 80% of direct labour cost.

Required:

(a) Equivalent production units **(02)**

(b) Cost of goods transferred to Department B **(09)**

(c) Accounting entries in the cost accounting system. **(06)**

Q.5 Zee Chemicals Limited (ZCL) produces two joint products, Alpha and Beta from a single production process. Both products are processed upto split-off point and sold without any further processing.

Presently, ZCL is considering the following proposals:

- Expansion of the existing facility by installing a new plant
- Installation of a refining plant to sell either Alpha or Beta after refining

To assess the above proposals, following data has been gathered:

(i) Actual cost incurred in the month of December 2014:

	Rs. in '000
Direct material	15,000
Variable conversion costs (Rs. 230 per hour)	4,890
Fixed overheads	2,600

(ii) Actual production and selling price for the month of December 2014:

	Litres	**Selling price per litre (Rs.)**
Alpha	11,300	1,000
Beta	14,700	1,125

(iii) There is no process loss and joint costs are apportioned between Alpha and Beta according to the weight of their output.

(iv) Details of the proposed plans are as follows:

	Expansion of existing facility	**Installation of refining plant**
Capacity in machine hours per month	5,000	5,000
	---------- Rs. in '000 ----------	
Cost of plant and its installation	20,000	25,000
Estimated residual value at the end of life	1,400	2,800
Estimated additional fixed overheads per month	250	500
Estimated useful life of the plant	20 Years	20 Years

(v) Estimated variable cost of refining and sales price of refined products:

	Alpha	**Beta**
	Rupees per liter	
Direct material	90	125
Conversion cost (Rs. 150 per hour)	68	80
Selling price	1,380	1,525

(vi) There would be no loss during the refining process. There is adequate demand for Alpha and Beta at split-off point and after refining.

Required:
Evaluate each of the above proposals and give your recommendations. **(16)**

Q.6 Hi-tech Limited (HL) assembles and sells various components of heavy construction equipment. HL is working on a proposal of assembling a new component EXV-99. Based on study of the product and market survey, the following information has been worked out:

Projected lifetime sale of the component EXV-99	**Units**	500,000
Selling price per unit	**Rs.**	11,000
Target gross profit percentage		40%

Information about cost of production of the new component is as follows:

(i) One unit of EXV-99 would require:

Parts no.	Net quantity	Cost per unit/kg (Rs.)
XX	1 unit	2,350
YY	1.5 kg	1,400
ZZ	1 unit	1,200

The above parts would be imported in a lot, for production of 1,000 units of EXV-99. Custom duty and other import charges would be 15% of cost price. HL is negotiating with the vendor who has agreed to offer further discount.

(ii) On average, assembling of one unit of EXV-99 would require 1.8 skilled labour hours at Rs. 200 per hour. The production would be carried out in a single shift of 8 hours. At the start of each shift, set-up of machines would require 30 minutes. 6% of the input quantity of YY and ZZ would be lost during assembly process.

(iii) HL works at a normal annual capacity of 4,000,000 skilled hours. Actual production overheads and skilled labour hours for the last two quarters are as under:

Quarter ended	Total assembly hours	Production overheads (Rs.)
30-Sep-2014	950,000	65,600,000
31-Dec-2014	1,050,000	68,000,000

(iv) A special machine that would be used exclusively for the production of EXV-99 would be purchased at a cost of Rs. 1,500,000.

Required:
From the above information, determine the discount that HL should obtain in order to achieve the target gross profit. **(16)**

(THE END)